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EXTRATHORACIC PAIN IN CARDIOVASCULAR DISEASE*

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The pain which a crippled heart can inflict is one of the more frightening experiences of clinical medicine. To most of us its essential distribution and typical radiations have an accepted and well-recognized pattern. But occasionally cardiac pain is encountered whose qualities are different, or a pain from other causes in a disordered cardiovascular system occurs, for instance, in the head, in the limbs, or in the abdomen, and presents a less familiar problem of diagnosis.

The purpose of this paper is to present some conditions where extrathoracic pain is the dominant symptom of structural or functional cardiovascular disease and to explore its clinical significance. In reviewing a large subject the exclusion of chest pain will serve to emphasize other clearly defined syndromes of pain, some of which are perhaps not so widely recognized.

Pain is a prevalent symptom which is notoriously difficult to assess, being entirely subjective and dependent on the acuity of the individual's sensory perception and also on his ability to describe it in words. An attack of coronary thrombosis in a labourer may cause less constitutional disturbance than a chilblain in a typist. To judge the relative gravity of a pain it is therefore desirable, whenever possible, to witness its occurrence or at least, by interrogation, to record accurately the patient's personal statements; the description may be graphic and, as we shall see, sometimes distinctive. On the other hand, a painful episode becomes exaggerated in the telling of it, and this is proportional to the number of times the subject has been interrogated; due allowance must therefore be given to possible distortion of symptoms.

Headache

Headache more often than not is a symptom which recurs without signs. We can, however, distinguish several varieties which are peculiar to specific circulatory disorders, though it is not easy to find a single common cause. However, largely as the result of Pickering's (1933) studies on histamine headache, we recognize that pain perception arises in the tissues of the dura round the meningeal arteries, where the sensitive trigeminal nerve-endings are affected by stretching or traction. Pressure changes within the minute vessels of the brain are probably of importance in the pathogenesis of hypertensive headache.

The interpretation of headache calls for a very careful interrogation and clinical understanding of the patient; we must not forget that he or she may have two kinds of headache—the one perhaps of little consequence, while the other may be the symptom of a fatal illness.

*From a postgraduate lecture delivered on Jan. 28.

Temporal arteritis is a malady of older age, and appears to be commoner in countrymen and countrywomen. Its special feature is a constant, dull, and throbbing pain in one or both temples, at times sharp, stabbing, and severe, aggravated by cold winds and by movements of the head. The headache tends to wax and wane, often enough preventing sleep, and persists for several months before gradually dying away. But it is also accompanied by a vague sense of malaise, weakness and fatigue, bodily aches, loss of weight, and low fever. Indeed, the patients seem ill out of all proportion to their physical signs, and may at the height of the disease become very ill indeed. The blood pressure is normal and there is no significant arteriosclerosis, but blindness may follow, due presumably to retinal ischaemia from involvement of the vessels behind the globe (Harrison, 1948). The temporal arteries are conspicuously thickened, nodular, and very tender. The overlying skin may be reddened and oedematous. Pulsation in them is diminished or absent. Histologically we find an inflammatory reaction in the adventitial coat, invading the media, with focal necrosis and granulation tissue in which giant cells are numerous. It seems probable that the arterial tree throughout the body is similarly affected, and there is a good deal of evidence to indicate that we are here considering a generalized disease, somewhat resembling polyarteritis nodosa, though with a better prognosis possibly because the kidneys are spared. Excision of a piece of the temporal artery for biopsy is followed by relief of the pain; procaine injections along the artery or of the stellate ganglion are said to have the same therapeutic effect (Roberts and Ashey, 1948).

The headache of *subarachnoid haemorrhage* is characteristic. I recall a patient who collapsed while pumping her bicycle. On regaining consciousness she recollected stooping over the punctured tyre, but insisted that someone had hit her across the back of the head with a steel bar, so sudden and arresting had been the onset of her pain. The rupture of the internal carotid aneurysm usually occurs on physical straining. Sudden agonizing headache is followed by clouding of consciousness, with evidence of meningism, a raised intracranial pressure, and blood in the cerebrospinal fluid. Sometimes localizing signs may appear, such as pulsating exophthalmos with knife-like retro-orbital pain or a third-nerve lesion with contralateral hemiplegia.

Aortic incompetence is occasionally attended by a troublesome pulsating headache.

A hairdresser, aged 45, had contracted a chancre at the age of 17 and was pronounced cured after three months' treatment. When using a hair-massage vibrator on a customer he was suddenly overcome by a noisy beating in his chest. At the age of 42 his blood Wassermann reaction had been found

positive on routine testing as a blood donor, and antisyphilitic treatment was begun. In this attack he had no pain or breathlessness, but when examined a loud "twanging" diastolic murmur could be heard all over the chest, front and back, with a diastolic thrill present at the aortic area. Blood pressure was 220/40 and the pulse regular. Radioscopy showed slight general enlargement with increased pulsation, but a normal aorta. The blood W.R. was then negative. Six months later he developed a continuous occipital headache with violent throbbing in his temples. The collapsing nature of the pulse in his temporal, carotid, and subclavian arteries was so pronounced that it could best be described as "detonating." This prostrating headache was relieved by sleeping with the head propped up by pillows.

Here the symptoms were evidently related to the unusually high pulse pressure resulting from probable partial rupture of an aortic valve cusp.

Headache develops in prolonged *anoxia* and in *polycythaemia*, but in the cyanotic plethora of *superior caval obstruction* it is perhaps uncommon. Intense headache may be a symptom of *dissection of the aorta* involving the carotid artery.

Many patients with *hypertension* wake every morning with an occipital or frontal headache, which varies in degree from a dull ache to a savage pounding and then gradually wears off as the morning progresses, only to recur day after day for many weeks at a time. It seldom awakens the patient, unlike the pain of increased intracranial pressure, and is not affected by straining but only by posture. Possibly this particular headache is more frequent in the unstable case of early or mounting blood pressure, being a less common finding in long-established benign hypertension. On the other hand, it may disappear without any fall in pressure; moreover, some patients with high-grade hypertension (Group IV), papilloedema, and a raised C.S.F. pressure have no headache.

A number of remedies have been tried for this distressing symptom, but in my experience bed-rest with the head propped high on pillows, barbiturate sedation, and aspirin are as useful as any of the more active lines of treatment and have at least the advantage of simplicity. Venesection often relieves the patient for a few days, but lumbar puncture, intravenous sucrose, dehydration, thiocyanate therapy, and even thoraco-lumbar sympathectomy may all prove disappointing.

Fishberg (1948) points out that the relief of headaches, which lumbar sympathectomy undoubtedly does achieve, may be due to a resultant redistribution of cardiac output, with a reduction of the fraction going to the head and arms. As evidence for this post-operative redistribution of blood flow he cites the clinical finding of cooler hands and warmer feet and the phenomenon of postural hypotension. That the vascular territory is not in fact denervated is supported by the persistence after operation of retinal arterial narrowing in the absence of headache. One of the clinical circumstances where diminished blood flow to the head is usually attended by relief of hypertensive headache is with the appearance of congestive failure, when, though the systolic blood pressure falls, the diastolic remains high.

Angina

The conventional reference of cardiac pain to the throat, arms, or lower jaw is familiar. But problems of diagnosis arise when a referred pain occurs alone or with insignificant pain in the chest. I have known a patient consult his dentist because of severe aching pain in the teeth when walking in the cold air. This could be relieved by closing his mouth and resting for a few seconds, but was in fact a true anginal pain. Cardiac pain may arise predominantly in the arms.

A retired Army colonel of 65, three months after a coronary thrombosis from which he had made a good functional recovery, was having to get up several times a night with severe pain in both wrists, eased more by papaverine than by trinitrin. Aching pain in the left forearm and left-sided toothache had been a prominent accompaniment of the heavy sternal pain which woke him at 3 a.m. in his original attack. Serial cardiograms in this case were typical of anterior infarction of the left ventricle.

A departmental manager, aged 63, complained of bad neuralgic pains on exertion, eased at once by rest, which always started in his left arm below the elbow and radiated up the arm to the jaw, the suprasternal notch, and right chest. The pain was also brought on in bed by cold linen sheets. His cardiogram showed changes of posterior infarction, returning later to normal. This pain syndrome is an instance of so-called "reversed angina."

That the pain of angina may be felt in a phantom limb suggests that the pain reference is not a simple segmental sensory reflex but possibly depends on cortical connexions (Harman, 1948). A patient whose left arm was amputated 4 in. (10 cm.) below the elbow-joint developed angina pectoris and began to be troubled by pain on effort in the phantom hand of such severity that he was obliged to obtain a new artificial limb, thinking that the old bucket was chafing his stump.

In considering differential diagnosis it is wise to remember that in the older age groups where coronary disease is more prevalent many patients are also subject to spinal-root pains, fibrositis, and lumbago of varying degrees, due to spondylarthritis and other degenerative skeletal processes. Effort pain may then arise in the back and, resembling cardiac pain in its distribution, be referred to the front of the chest or abdomen, and sometimes to the arms. However, these pains typically come on, not on ordinary physical exertion, but with specific movements such as bending, turning, lifting weights, or straining. After prolonged sitting—e.g., in the cinema or at the wheel of their car—these individuals develop a restless discomfort, eased by standing up or stretching their back, not unlike the relief obtained in sufferers from hiatus hernia. Such symptoms can be reproduced by pressure over the dorsal vertebrae, by hypertonic saline injection of the interspinous ligament, or by forced flexion of the head, and alleviated by rehabilitation and orthopaedic correction of faulty posture (Davis, 1948).

Upper abdominal pain on exertion, eased by rest, but due to the hepatic congestion of early right heart failure, must also be distinguished symptomatically from angina pectoris. Patients may describe their distress as more of a feeling of epigastric fullness or discomfort on exertion than a pain; or they may state that the abdomen is "tender to the bedclothes." Occasionally an acute surgical abdominal incident, such as a perforated gastric ulcer, closely simulates coronary thrombosis, particularly during the initial stages. After the first twenty-four hours, however, the distinction more often than not becomes apparent.

Pain in the Hands

We have seen that both angina and fibrositis can cause pain in the arms, but now and then a cramp-like pain arises in the arms of manual workers with repeated muscular use of those limbs which is due to *obliterative arterial disease*, an ischaemic manifestation identical with claudication in the legs.

An upholsterer, aged 53, whose work involved the pulling and stretching of heavy materials to cover sofas, complained for four years of an aching, stiff pain in the forearms and backs of the hands, mainly right-sided. He habitually experienced this pain at his work, particularly in the cold and

ards the end of a heavy week, yet it always subsided at on resting. He had no other symptoms, and physical mination disclosed moderate arteriosclerosis only.

he disagreeable, sometimes very severe, aching pain in fingers of sufferers from *Raynaud's disease* when exposed old is due partly to nutritional changes and areas of nt necrosis in the fingers and partly to the sudden se of warm blood into chilled fingers which follows release of arterial spasm (Lewis, 1936). Exquisite local erness is often associated, and can be so intolerable it will reduce a man to a state of quivering sobs. Lewis roved the earlier conception that arterial spasm was the e of the pain in this condition, for, although digital ial spasm accompanies every attack, pain is not plained of in the more benign cases of Raynaud's ase.

he *glomus tumour* is a more uncommon lesion but is ically important because of the paroxysms of pain which roduces. It consists of a benign hypertrophy of the roscopic arteriovenous capillary anastomoses which st in the skin, chiefly of the pulp and nail-bed of normal gers (Masson, 1924), and in health probably subserves function of controlling skin temperature. The glomus our appears as a small slate-blue elevation on the skin, ugh if subungual in position it may not even be visible, its most discriminative feature is the agonizing pain ich the patient feels on the slightest pressure, friction, exposure to cold. Now and then localized erosion of terminal phalanx can be demonstrated by radiographs. e rich supply of nerve fibres which terminates about the thelioid cells that comprise the vascular spaces of the mal body would seem to be unduly sensitive to changes vascular tension and so account for the inordinate pain ich simple manipulation produces. These tumours may single or multiple, and vary in size from a pin's head to cherry stone. Surgical excision is usually curative.

Abdominal Pain

Aneurysm of the abdominal aorta was stated by Osler 05) to be seven times less common than thoracic aortic eurysm. Improvements in antisyphilitic therapy and an reasing average age of the population are modern factors ich have probably diminished this ratio, so that the sent picture has somewhat altered. Aneurysm of the dominal aorta seldom arises before the age of 50, and generally arteriosclerotic in origin. It is said to provide ne of the most varied and dramatic pictures seen in ical medicine (Jennings, 1941). The "dull, boring, steady n with awful paroxysms," wrote Stokes (1854), "enables to diagnosticate the disease with probable accuracy." e pain, he observed, could be relieved by lying the face or turning on the side. The following sonal case would appear to be an example of this dition.

A housewife, aged 72, complained of a throbbing, aching al pain of six months' duration, eased by walking about made worse when she sat on a chair or lay down. She stated that her feet had always felt cold. The only signifi- clinical finding was weak pulsation in the arteries of the leg, but *x*-ray examination showed a calcified abdominal of irregular calibre. Physiotherapy has not affected symptoms.

In these instances the pain may be due in part to bony ion of the vertebral column, yet it is interesting to note owing to their resilience, the intervertebral disks often t. Palpation of the abdomen perhaps discloses a fixed, nsile, tender, pulsating tumour, maybe with a murmur d or a thrill felt over it. The epigastric pulsation of an rged right ventricle must not be confused with an aortic aneurysm—the systolic thrust of the latter comes appreciably after the ventricular pulse—or with the symptomless dynamic pulsation of a normal aorta which is so easily demonstrated in the patient with a scaphoid abdomen and exaggerated lumbar lordosis, particularly if there is nervous overaction of her heart. Although an aortic aneurysm may rupture several months after the pain first appears, the prognosis is very often better, depending on the location and size of the aneurysm. Rupture is not always fatal.

Dissecting Aneurysm

During the last 25 years at Westminster Hospital there were 26 deaths from this cause, giving an incidence of 1 in 152 necropsies (Pulvertaft, 1949, personal communication). Elsewhere the necropsy incidence has been 1 in 430 (Glendy *et al.*, 1937) and 1 in 454 (Warren and McQuown, 1948). Although clearly a rare and often fatal condition, the number of cases diagnosed during life is steadily increasing, and we now realize that survival for some years may be possible, especially when re-entry of the dissection takes place into the original aortic lumen.

The important clinical feature to recognize is the dramatic suddenness of the onset of the pain and its initial overwhelming severity. Tearing, stabbing, choking pain strikes the patient usually across the chest and arms, but may spread to the back and down the abdomen to the labia or testicles, later to the legs. It may be intermittent and disappear gradually, to recur in subsequent attacks at lower levels as the dissection extends. Unlike the pain of cardiac infarction it is singularly maximal at its onset; a sense of constriction is unusual, hypertension is invariably present, and the dissection commonly begins during an act of physical exertion or sudden emotional strain. Severe pain in the back or spine indicates splitting up of the walls of the descending aorta, with rupture of the intercostal and lumbar arteries (Shennan, 1934). The dissection may obliterate the coeliac axis to cause infarction of the bowel, or the renal arteries may be involved.

From a detailed study of 28 cases Shennan decided that the essential aetiological lesions in this condition were multiple faults in the aortic media, which were filled with homogeneous connective tissue. Contrary to the common belief, the development of aortic dissection by penetration of the blood into the wall of the vessel through the base of an atheromatous plaque is extremely rare. The fact that the intima was sometimes intact suggested that haemorrhage might originate from the vasa vasorum.

In the symptomatology of *mass thrombus of the left auricle*, which occurs in certain cases of mitral stenosis, Evans and Benson (1948) point out that attacks of anginal pain in the chest are usual.

A woman, aged 57, with mitral stenosis and fibrillation, whom I have at present under observation, was seized with sternal pain for 12 hours; next day she developed an equally severe pain in the back and right loin. Her blood pressure was normal. The whole sequence of symptoms, from which she eventually made a good recovery, was at the time striking enough to invite possible confusion with dissection of the aorta, yet the aetiology was probably mass thrombus causing acute coronary insufficiency, followed by a small right renal infarct.

Embolic or Thrombotic Occlusion of the Aorta

In a patient with long-standing rheumatic mitral stenosis and fibrillation, or with a past history of coronary thrombosis, the onset of an abrupt, sharp, intense, and agonizing pain in the legs, loins, abdomen, or back, followed by shock, loss of power, and gangrene, with absence of pulsation in the abdominal aorta, suggests embolism at the aortic bifurcation (Morest and Rubin, 1948). Multiple visceral

embolic incidents may have preceded or may accompany it. Thrombosis of the aorta, on the other hand, is characteristically of gradual onset and develops usually in an arteriosclerotic subject; it is often preceded by symptoms of claudication in the legs (Banowitch and Ira, 1928). These features are illustrated by the following case.

A stock foreman, aged 50, with 2½ years' history of bilateral saphenous thrombophlebitis, followed by a coronary thrombosis and increasing claudication in the right calf, was in hospital for treatment of gangrene of the right big toe. He had clinical signs of generalized arteriosclerosis with an impoverished arterial circulation in both feet. Electrocardiograms showed fibrillation and left bundle-branch block. One morning a month later a mild griping umbilical pain developed, gradually increasing in intensity. By midday it was severe, and vomiting, bloody diarrhoea, and shock came on. By evening morphine eased the pain, but two days later a sudden haematemesis closed the scene. Necropsy revealed an old apical infarct of the left ventricle with a large mural thrombus. An extensive thrombus occluded the aorta from above the origin of the superior mesenteric to below the bifurcation of the iliac arteries. The whole of the small intestine was infarcted. Atheroma was present in the coronary arteries, aorta, and right popliteal.

From time to time, as in the following case, the pain of a *false aneurysm* presents difficult diagnostic features.

An ice-cream manufacturer, aged 26, with a history of previous rejection for military service because of a rheumatic heart, developed a septic rash and fever. Three weeks later, when admitted to hospital, the blood culture yielded haemolytic *Staphylococcus aureus;* penicillin therapy was started at once (500,000 units a day).

On examination there was a loud apical systolic murmur and a mitral diastolic murmur. Rhythm was regular. After three weeks the fever was still present, so the penicillin dosage was doubled. He now began to complain of a series of pains which baffled his physicians, though admittedly examination was always difficult because he was a grossly obese and excitable subject: first a severe suprapubic pain with vomiting; five days later acute cramping pain in the right leg, yet without any unusual physical signs. Three weeks later he had an intense pain in the right groin, with shock, and developed signs of psoas irritation. Rectal examination was negative. A week later, with groin pain and thigh flexion continuing, thrombosis became evident in the right saphenous vein, and within a few days his leg was oedematous. Although he repeatedly complained of a great deal of pain throughout the next few weeks, his temperature fell to normal, and a non-tender cord-like thickening of the vein in the groin could then be made out. Three months after admission he became suddenly breathless with pain in the chest; anuria set in, and in forty-eight hours, with signs of a left lung infarct, he succumbed.

Necropsy showed that his attacks of pain had been due to a false aneurysm of the pelvic vessels, probably mycotic. A blood cyst the size of a large grapefruit lay against the right brim of the pelvis, containing laminated clot and compressing the right common iliac artery and vein. Venous thrombosis extended down the veins in the thigh and up the inferior cava to the right renal vein. Old infarcts were present in the right kidney. In the heart the left ventricle was considerably hypertrophied, and the aortic cusp of the mitral valve contained a perforation ¼ in. (1.9 cm.) in diameter surrounded by healed vegetations. The upper lobe branch of the left pulmonary artery was occluded by recent thrombotic embolus.

Pain in the Legs

The uncomfortable, continuous, aching pain that arises in the calf of the healthy leg when walking fast in tight puttees, or in the shin when bicycling hard or skating, is identical with the pain of *intermittent claudication.* It is produced by a relative ischaemia of the working muscle. There are, indeed, many pathological processes in which this disproportion between the blood requirement of the leg and its blood supply is enough to induce such a pain, but the commonest is *obliterative arterial disease.* Claudication is an occasional symptom of *severe anaemia, aortic stenosis, arteriovenous fistula, coarctation,* after *aneurysm thrombosis,* or *embolism* of the *femoral* or *popliteal artery,* in some cases of *mitral stenosis,* and, rarely, in a prolonged attack of *paroxysmal tachycardia.* The pain is described as cramp-like only because of its resemblance to the pain of muscle cramp, for tonic spasm of the ischaemic muscle does not in fact take place.

The reason why the effects of arterial obstruction by intravascular thrombus are more profound than similar ligation is because the collateral vessels are usually already diseased and clotting is often extensive, obliterating the mouths of many collaterals.

An office worker, aged 49, for five months had a local... pain in the right calf on walking, which had gradually become so severe that slow walking for 100 yards brought it on ... made him stop to obtain relief. Skin temperatures of ... feet were normal, but pulsation in the right popliteal, ti... and dorsalis pedis arteries was reduced. Arteriograms sho... an obstruction in the middle of the femoral artery ... collateral channels. He was operated upon and 4.5 cm. of ... right femoral artery excised; this contained organized thro... on an atheromatous plaque. The vessel was reconstituted ... a portion of saphenous vein from the left leg and joined ... vitallium tube. A month later, although he still had ... palpable pulse in the right foot, he was able to walk a ... without pain.

Many patients such as he provide a clear enough descr... tion of their symptoms to make recognition easy, but it ... be remembered that various orthopaedic conditions ... rise, on using the limb, to pain which is also eased by ... It will be noted, for example, that the pain of arthriti... not relieved by simple halting, but that the patient has ... sit down to be relieved of it. Exercise tolerance in claud... tion relates to the extent of the arterial disease, freque... an asymmetrical process; so it happens that pain in ... worse limb may restrict walking before the sounder li... is fully tested. Similarly, an advanced degree of arte... insufficiency in both legs can be masked by a limitatio... the capacity for exercise which angina or dyspnoea ... impose; the converse is also true. In arteriosclero... obliterans the reduced blood supply to the limb soone... later causes coldness in the foot, and the toes are o... cyanosed. The skin may undergo further trophic ... inflammatory changes as a result of damage by cold, ... become glossy, telangiectatic, and unduly sensitive ... warmth and friction. In these circumstances pain is ... *at rest.*

A clerk, aged 71, for two years complained of pain in ... calves which pulled him up after five minutes' walking. Re... eased it at once. For the previous nine months he had ... had constant pain in the toes of the right foot—"They bu... in bed at night"—so that he was obliged to hang his ... out in the cool air or stand up by his bed to obtain re... The toes were cold and plum-coloured, and arterial pulsa... was absent from both feet.

In cases of rest pain the simple correction of a bed wi... mattress sags in the middle may prevent some post... ischaemia of the feet.

The third variety of pain in arteriosclerotic disease ... the lower limbs is that of *gangrene.* When the vitality ... healing power of the tissues is so reduced that infec... and necrosis may proceed unchecked, gangrene s... readily from a superficial abrasion, a corn, or a dama... toenail. Pain may be extreme. Lewis's advice to care... the feet as though they were pieces of porcelain canno... given early enough to sufferers from this complaint.

With *arterial embolism* the dramatic onset of a sud... severe pain in the leg, becoming more intense, aching,

use, usually precedes the other signs. Lewis (1936) has inted out that this pain does not arise in the artery at site of the obstruction but much lower in the limb in muscles deprived suddenly thereby of their blood pply, and that its onset even when abrupt is delayed. is relative in severity to the size of the occluded artery ly because a greater territory of tissue is rendered chaemic, and it is relieved instantly when the blood pply is restored by removal of the clot, or it is reduced degree if the plug passes on. Thus embolism of the ain or spleen is painless, because those organs contain muscle. There is no evidence that arterial spasm alone rectly produces pain.

The clinical associations of embolic catastrophes are well ustrated by the following case.

A man aged 38, who eight years previously was found to ve mitral stenosis, developed auricular fibrillation and at same time a sudden (painless) right hemiplegia due to rebral embolus. Two years later his digitalis was inadvertly stopped for a while and his heart began to race. Ten yr after redigitalization he woke with a violent pain in the emiplegic leg and the foot went cold. The agony of his ain lasted twenty-four hours and was relieved only by hanging e foot down. From 4 in. (10 cm.) below the knee his leg as found to be cyanosed, oedematous, and icy cold. The agnosis of popliteal embolus was made and he was treated nservatively. Within ten months he could walk unaided for 0 yards without pain, but four months later he suffered other stroke and died.

Tragic examples of this nature are only too common here embolic incidents have accompanied the onset of brillation or have followed mistakes in treatment. Because e pulse rate is slow or the symptoms have abated, digitalis aintenance therapy is stopped; the insidious acceleration the ventricular rate which ensues is fraught with ngerous consequences. Such accidents would happen ss often if we always remembered to warn each patient ith auricular fibrillation that digitalis was his life-line, be depended upon perpetually for the rest of his days.

Conclusions

In those circulatory conditions where a prevailing symptm is extrathoracic pain (in the head, limbs, or body) the generative arterial disorders play an important part with eir attendant thrombotic and embolic incidents. Hence e symptom of extrathoracic pain in cardiovascular disease r the most part is rare in childhood, unusual in youth, t commoner as age advances. The pain usually conforms some distinctive clinical picture. Examples are conered in this paper with the object of promoting miliarity with their qualities.

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VIOFORM IN THE TREATMENT OF SKIN DISEASES

BY

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The quinoline derivative known as "vioform" (5-chloro-7-iodo-8-hydroxyquinoline) is a stable, almost odourless, greyish-yellow powder which is only slightly soluble in water. It contains 41% iodine and 12% chlorine, and its use in the treatment of amoebiasis is world-wide (Cameron, 1947). For several decades it has been used as an antiseptic dusting powder and as the active ingredient of Alexander's ointment on the Continent (Perutz *et al.*, 1933). Only within recent years has its value in dermatology been appreciated in America (Wise and Sulzberger, 1942; Sulzberger and Wolf, 1942; Pillsbury *et al.*, 1943), and the external therapeutic uses were recorded by the American Medical Association in 1944. In Great Britain its value in dermatology has not yet been estimated.

Early in 1948 I obtained a small quantity of vioform powder and, in a 3% strength in a water-miscible cream, found it to be most useful in the treatment of pyococcal skin infections. The importing chemists then kindly offered to manufacture two types of preparation for trial, and a clinical investigation was started in June, 1948.*

Preparations Used.—Guided by the experience of Sulzberger and Baer (1946), it was decided to use only the following two preparations: (1) vioform cream (V.C.), which consists of 3% vioform in a water-soluble base composed of sodium lauryl, stearyl alcohol, spermaceti, glycerin, yellow soft paraffin, and water; (2) vioform ointment (V.O.), consisting of 3% vioform in a simple petroleum-jelly base.

Selection of Cases.—The majority of the cases were treated as out-patients. The greater number and variety of such cases outweighed the uncertainty of proper application by the patient. Patients of any age or sex were treated, but in view of the limited supplies of vioform no cases of widespread dermatoses were included. With the knowledge that other hydroxyquinoline ointments were useful in the management of pyodermias, it is not surprising that many cases of this type were chosen.

Control of Results.—It was considered that the number of cases would be too small to compare this remedy against a standard topical treatment by the method of treating alternate cases suffering from the same skin disease. Likewise, the better method of comparing the results of two similarly affected and symmetrically situated lesions in the one person treated by two different methods was thought impracticable in dealing with out-patients. Where it is considered to be of interest, however, reference will be made to previous treatments which had failed.

Classification of Cases.—A total of 115 consecutive cases of various skin diseases were treated. These have been grouped thus:

Group A ..	Sycosis barbae	15 cases
,, B ..	Folliculitis of other areas	17 ,,
,, C ..	Impetigo contagiosa	14 ,,
,, D ..	Acne vulgaris	10 ,,
,, E ..	Impetiginized eczema	14 ,,
,, F ..	Post-auricular dermatitis	10 ,,
,, G ..	Miscellaneous group	35 ,,

Where more than one type of infection was present the case was listed under the more prominent condition.

*I am indebted to Messrs. Ciba Laboratories, Ltd., Horsham, Sussex, for kindly supplying the applications used in this study.

Results of Treatment

Group A. Sycosis Barbae

The patients were instructed to use V.C. for shaving, and to leave a film on the face thereafter. A second application was advised at midday, and V.O. was used at bedtime. They were told that this was a treatment under trial, and all promised to report any relapse which might occur.

TABLE I

Case No.	Duration of Disease	Type and Severity	Previous Treatment	Bacteriology	Treatment Time Using Vioform	Follow-up
6	7 months	Average	Pen., Hg	—	3 weeks	Relapse 3 mths. later
8	12 years	,,	Quin.	—	4 ,,	No relapse 2 mths. later
11	6 ,,	Superficial	Pen., Hg	—	3 ,,	No relapse 3 mthe. later
16	2 ,,	Average	Pen.	Pen.-sensit. S.P.A.	6 ,,	No relapse reported in 5 mths.
18	2 weeks	Superficial	Pen., Hg	Pen.-sensit. S.P.A.	3 ,,	No relapse in 3 mths.
33	4 ,,	,,	Pen. cream	S.P.A.	1 week	No relapse 3 mths. later
37	3 years	Deep-seated	Pen., Quin., *X* rays	*Staph. albus*	12 weeks	Improving
39	3 ,,	,, ,,	Pen., Hg, Sulpha.,Quin.	S.P.A.++	8 ,,	No relapse 5 mths. later
41	2 weeks	Superficial	Pen., Hg, Sulpha.,Quin.	Pen.-sensit. S.P.A.++	1 week	Relapse 1 mth. later
44	2 ,,	,,	Quin.,Sulpha.	—	1 ,,	No relapse reported
74	15 months	Deep-seated	Pen., Hg	S.P.A.+	6 weeks	Improved
84	6 weeks	Superficial	Pen. ung. and cream	Pen.-sensit. S.P.A.	2 ,,	No relapse 5 mths. later
89	18 months	Average	Pen. cream, Hg	—	1 week	No relapse 6 mths. later
90	5 years	,,	Pen., Quin., *X* rays, Vaccine	—	2 weeks	No relapse 5 mths. later
93	2 weeks	Superficial	Not known	—	2 ,,	No relapse 2 mths. later

Hg = A mercury ointment. Pen. = Penicillin preparation. Sulpha. = Sulphonamide cream. Quin. = Ung. Quinolor Co. S.P.A. = *Staphylococcus pyogenes aureus.*

Table I shows that 13 out of the 15 cases had no signs of active disease after treatment with vioform alone. Only two of these 13 cases had slight relapses, which quickly responded to further treatment. The average treatment time of the 11 cases which were apparently cured after one course was three weeks, and the average duration of the disease before treatment was over 2½ years.

With such a short follow-up period it cannot be claimed that 87% of the cases were "cured." It will be noted that four of the cases failed to report back after apparent cure. These cases may be considered to have remained free from symptoms for the following reasons: (1) three of them had suffered for several years and had been "cured" in a few weeks; (2) vioform preparations could not be renewed without further consultation and were not yet on sale to the public; and (3) three of the cases lived in a country district served by one local hospital.

The only two failures were Cases 37 and 74. The former patient volunteered that it was "easily the best stuff" he had used in his three years of treatment. In both cases the lesions were indurated and deep-seated, and the pus was caseous. Case 74 was eventually cleared up by cauterizing the four remaining pustules with pure phenol, and Case 37 is at present having fractional doses of *x* rays in conjunction with vioform treatment.

It is of interest to note that twelve of these cases had previously been treated unsuccessfully with local penicillin, and that in four of these the causative staphylococcus was found to be penicillin-sensitive.

Table II shows that all 17 cases responded well to treatment. The average duration of treatment was just under three weeks, but this includes two cases which required six weeks; these two cases were infections of the forearms

Group B: Folliculitis of Other Areas

TABLE II

Case No.	Site	Duration of Disease	Previous Treatment	Vioform Prep. Used	Bacteriology	Time to Cure
2	Hand	3 weeks	Pen. cream	V.O.	—	10 days
14	Legs	3 months	Sulpha., Pen.	V.O.	Pen.-sensit. S.P.A.	4 weeks
24	Thighs	Few days	Nil	V.O.	S.P.A.	10 days
36	Pubis	2 weeks	G.V.	V.O.	S.P.A.	7 ,,
38	,,	4 ,,	Hg	V.O.	S.P.A. and Str. haem. C	7 ,,
40	Arms	4 ,,	Pen. syst. and local	V.C.	S.P.A.++	2 weeks
45	Scalp	18 months	Quin., G.V., Hg	V.C.	Sterile	4 ,,
55	Pubis	6 weeks	Pen. ung.	V.C.	S.P.A.	3 ,,
77	Arms, neck,	8 days	Nil	V.O.	S.P.A.	Relapse 6 mths. later
86	Groin	4 months	Not known	V.O.	—	6 weeks
94	Pubis, axillae	5 years	Pen. syst. and local	V.O.	S.P.A.++ Pen.-resist.	2 ,,
97	Back	8 months	Hg	V.O.	Sterile (2)	4 ,, Improved
101	Forearms	4 weeks	Pen. syst. and local	V.O.	Pen.-sensit. S.P.A.+	2 weeks
105	Nape of neck	2 ,,	Hg, $AgNO_3$, B.G., Pen.	V.C.	—	6 ,,
110	Temples	2 months	Hg	V.C., V.O.	Pen.-sensit. S.P.A.	7 days
111	Groin	5 ,,	Hg, Pen.	V.O.	—	2 weeks
114	,,	2 ,,	Pen. local	V.O.	—	4 ,,
						4 ,,

Pen. = Penicillin preparation. $AgNO_3$ = Silver nitrate lotion ½%. Hg = mercury preparation. G.V. = ½% Gentian violet lotion. S.P.A. = *Staph. pyogenes aureus.* B.G. = ½% Brilliant green. Str. haem. C = *Str. haemolyticus* Group C.

in manual workers, and it was thought that the mode of application was unsatisfactory: both cleared up quickly when V.O. was applied under a "viscopaste" bandage. All patients continued their normal activities whilst under treatment.

Group C: Impetigo Contagiosa

TABLE III

Case No.	Site	Duration of Disease	Previous Treatment	Vioform Prep. Used	Bacteriology	Time to Cure
24	Nose	4 months	Pen., Hg, Quin.	V.C.	S.P.A.	1 week
64	Ears, face	1 month	Pen. cream	V.C.	Pen.-resist. S.P.A.	2 weeks
73	,, ,,	5 days	,, ,,	V.C.	—	3 ,,
79	Pubis	9 months	Pen. local	V.C.	Pen.-sensit. Str. haem. C	4 ,,
85	Scalp	8 weeks	Not known	V.C.	S.P.A.	2 ,,
92	Ears	3 ,,	,, ,,	V.C.	—	1 week
96	Face	3 months	,, ,,	V.C.	Sterile	1 ,,
98	,,	2 weeks	Pen. cream	V.C.	Pen.-sensit. S.P.A.++	1 ,,
99	Ears, face	4 months	Pen., Sulpha., Quin.	V.C.	Pen.-sensit. S.P.A.	1 ,,
100	Scalp	4 ,,	Not known	V.O.	—	2 weeks
102	Neck, ears	6 weeks	Pen., Resorcin	V.C., V.O.	Pen.-sensit. S.P.A.	2 ,,
103	Face	3 ,,	Pen.	V.C.	Pen.-sensit. S.P.A.++	1 week
107	Face, neck	2 ,,	Sulpha., Ung. S. & S.	V.C.	Pen.-sensit. S.P.A.	1 ,,
109	Temples	4 ,,	Pen. local	V.C.	Pen.-resist. S.P.A.	2 weeks

Pen. = Penicillin preparation. S.P.A. = *Staph. pyogenes aureus.* Sulpha. = Sulphonamide cream. Str. haem. C = *Str. haemolyticus* Group C. Quin. = Ung. Quinolor Co. Ung. S. & S. = Ung. sulphur and salicylic acid *B.P.*

The results in all cases were good, and no relapses have been reported (Table III). In no case was any additional application used to remove infected crusts. Six cases from which the organism cultured was reported to be penicillin-sensitive failed to respond to local penicillin therapy. In many cases the patients claimed to be cured in two to three days, and the duration shown in Table III was the time interval till the patient was actually seen to be cured. Even with this possible overestimation the average treatment time for all types was only 10 days.

Group D: Acne Vulgaris

Ten cases of pustular acne were treated, and only five showed some slight improvement after four weeks of V.O.

twice daily. The results were not impressive, as it must be remembered that, while vioform was the only local application, the patients were advised regarding general hygiene and diet, and in several cases oestrogens and/or vitamins were given simultaneously.

I formerly used "ung. quinolor co." (Squibb) in cases of pustular acne with decidedly better results, possibly due to the benzoyl peroxide content in this preparation.

Group E: Impetiginized Eczema

There were 14 cases of eczema (mostly exogenous) which had become secondarily infected, and all presented crusted discoid lesions. In two-thirds of the cases the hands and fingers were affected. The more exudative cases were treated with V.C. thrice daily, while the other half applied V.O. twice daily. In the four cases investigated *Staph. pyogenes aureus* was cultured. The average duration of treatment was just over two weeks, and during this time the patient was sheltering the affected area from external irritants. The underlying eczema was cured in only two cases, but in all cases the crusting and inflammation subsided satisfactorily.

Group F: Post-auricular Dermatitis

TABLE IV

Case No.	Sex	Age	Duration of Disease	Previous Treatment	Bacteriology	Prep. Used	Time to Effect Cure
28	F	44	6 weeks	G.V., Pen.	S.P.A., Str. haem. A.	V.C.	2 weeks
51	F	41	4 years	Hg, Pen., $AgNO_3$	—	V.O.	2 ,,
49	M	30	Not known	$AgNO_3$, Pen., Ung. S. & S.	S.P.A.++	V.O.	3 ,,
52	F	72	1 year	Ung. S. & S.	S.P.A.++ Strept.	V.O.	2 ,,
53	F	68	8 months	Ung. S. & S.	S.P.A.++	V.O.	1 week
59	M	37	5 weeks	Lot. calamin.	—	V.O.	2 weeks
61	F	24	2 years	Pen. syst. and local	—	V.O.	10 days
67	F	50	3 months	Not known	—	V.O.	6 weeks
71	F	32	3 weeks	Hg	S.P.A.	V.O.	1 week
117	M	45	2 months	Ung. S. & S.	Str. haem.	V.O.	1 ,,

Pen. = Penicillin preparation. S.P.A. = *Staph. pyogenes aureus*. Str. haem. A = *Str. haemolyticus* Group A. Hg = A mercury preparation. $AgNO_3$ = Silver nitrate lotion ½%. G.V. = Gentian violet lotion. Ung. S. & S. = Ung. sulphur and salicylic acid *B.P.*

Every case had associated seborrhoeic eczema, and two had menopausal symptoms. Clinically the skin behind the ears was found to be reddened, glazed, and often exuding serum. The response to treatment was very good, and the average treatment time was just over two weeks. No relapses have been reported (Table IV).

Group G: Miscellaneous

This group comprises a miscellaneous collection of dermatoses which are often rather resistant to treatment. There were 35 such cases.

Angular Stomatitis.—Four of the five cases treated with V.C. twice daily cleared up after an average treatment time of 10 days; no other therapy was given simultaneously. In two of the cases there was associated naso-labial fissuring, which also responded well. The one failure is discussed later when dealing with toxicity.

Interna tal Intertrigo.—There were five cases, which occurred in elderly patients. Clinically they did not suggest a fungous infection. The apposing skin surfaces were red and denuded, and in the midline there was often some superficial fissuring. Three of the five cases were considerably improved after four weeks' treatment with V.O.

Furunculosis.—Three of the four cases had suffered from recurrent boils for many years. In all four the septic conditions were cured within two weeks, but fresh boils occurred in two. These cases were found to have high fasting-blood-sugar levels, and when suitably dieted had no further furunculosis.

Chronic Perionychia.—Two of the four cases treated showed the typical chronic bolstering of the nail-folds, with dystrophy of the nails but no purulent discharge. Staphylococci were cultured in both cases, and after four weeks' treatment they showed considerable improvement. The other two cases had purulent lesions of the nail-folds from which *Staph. pyogenes aureus* was cultured; there were no whitlows. Both cleared up after applying V.O. for an average treatment time of three weeks, though they had been resistant to local penicillin treatment.

Septic Excoriations.—Two cases of generalized pruritus and one of excoriated acne were treated. V.O. cleared up the crusted lesions in a short time but did not lessen the pruritus.

Chronic Lichen Simplex.—Two cases of localized lichenified skin without any associated infection were not improved by the use of V.O., nor was the irritation lessened.

Pruritus Ani.—One case, in which no changes in the skin could be seen, failed to be relieved after four weeks on V.O.

Pustular Psoriasis.—Three cases of the toxic bacteride type, with small intra-epidermic lakes of pus and light-brown punctate scabs affecting the soles and palms, were not improved after several weeks' local treatment with V.O.

Pustular Epidermophytosis.—Two cases of secondarily infected epidermophytosis interdigitalis in which *Staph. pyogenes aureus* was cultured from the pus, but in which there was no acute pain or lymphangitis, were treated. All evidence of sepsis had gone when seen 14 days later.

Ulcers.—Two simple chronic ulcers of obscure origin, one of the chin and one of the thigh, were slightly improved after dressings with V.O. twice daily.

Acne Necrotica.—One case showed improvement after treatment with V.O., but was not cured.

Furfuraceous Impetigo.—One case of four years' duration showed no significant improvement after four weeks' treatment on V.O.

Herpes Zoster.—This patient was an elderly man who was febrile and had a large crusted plaque over the frontal region. *Staph. pyogenes aureus* was cultured. He was treated with V.C. thrice daily, and within one week all evidence of infection had gone.

Pemphigus Vulgaris.—In one case V.O. was found to be a useful antiseptic dressing which assisted the healing of the raw areas after rupture of the bullae.

Mode of Action; Toxicity

Animal experiments in the past (Ciba, Ltd., 1948) and also the following observation on a patient have failed to support the theory that the disinfecting action of vioform is due to the liberation of free iodine. A patient who had a severe contact dermatitis due to tincture of iodine and who reacted with an extensive vesicular eruption to painting 1 sq. in. (6.45 $cm.^2$) of her arm with liquor iodi mitis had no reaction after 48 hours' contact with 3% V.O.

About 5% of the patients treated admitted that there was a mild initial stinging of short duration, but in none of these cases was treatment discontinued.

In only one of the 115 cases was there severe primary irritation when V.O. was applied to the diseased skin. This patient was a nervous man who had had a long history of sycosis barbae, and his clinical record indicated that he was sensitive to sulphathiazole and "elastoplast." He reported with a slight angular stomatitis and erythema, scaling, and fissuring of the naso-labial folds. He was advised to apply V.O. twice daily to the affected areas, and when he reported two weeks later the condition was unchanged and he complained of intense irritation on each application of the ointment—he had stopped using it after only ten days. V.C. was applied in the consulting-room and he complained of irritation, though no inflammation was noted after 40 minutes. A patch test of V.O. applied to the healthy skin of the arm was negative after 48 hours. This is similar to the case of irritation reported by Reque (1947) in which true epidermal sensitivity was also absent. It seems probable that in my case the irritation was due to the vioform and not to the

paraffin base, as he subsequently improved on ung. hydrarg. ammon. dil.

Saunder (1946), who used vioform 1% in petrolatum in a mixed series of 14 cases, did not attempt any further study of the medication, because the incidence of irritation was too high and the beneficial results too poor.

No systemic toxic effects due to absorption from the skin were encountered. In view of the internal use of "enterovioform," this was not surprising.

Comment

In a study of a comparatively small number of cases in which the results of treatment were not controlled it is not possible to evaluate the efficiency of vioform scientifically. The clinical impression, however, in the management of several dermatological problems was extremely good. The ability to confront the chronic case of sycosis barbae and persistent post-auricular dermatitis without foreboding signifies at least the possession of a therapeutic agent of prowess. A safe and relatively non-irritant antiseptic or antibiotic is always welcome in dermatology; thus penicillin became the practitioner's friend. Later many pyococci were found to be resistant to it. It is probable that since the introduction of penicillin the number of skin infections referred to hospital has diminished—e.g., no cases of impetigo of children's faces have been seen in the last six months for inclusion in this series. No doubt the proportion of penicillin-resistant cases seen in hospital has increased. Whether vioform is superior to penicillin in the treatment of pyodermias cannot be assessed from this report, but it is a fact that in at least 37 cases in which penicillin had failed vioform produced the desired result. In the 16 cases in which penicillin sensitivity was estimated four were resistant and 12 were sensitive to penicillin. In 11 of these 12 cases penicillin had previously been used and had failed to improve the skin infection.

Summary and Conclusions

The value of 3% vioform in an ointment and in a cream base has been studied in 115 dermatological cases.

The results indicate that vioform is a valuable therapeutic agent in dermatological practice, and particularly in the treatment of pyococcal skin infections such as impetigo, folliculitis (especially sycosis barbae), impetiginized eczema, angular stomatitis, and post-auricular dermatitis. The cases of acne vulgaris in this series were not greatly improved.

It is relatively non-irritating, and the occurrence of epidermal sensitization is rare.

While it relieves the prickling of infected eczemas, it does not seem to have any antipruritic effect on non-infected dermatoses.

The only slight disadvantage revealed was the yellowish-grey colour. The cream is easily washed out of cotton fabrics, but stains from the use of the ointment are more difficult to remove.

Further study is required to estimate its value in other vehicles in dermatology, and also in other branches of medicine where antiseptic applications are required.

It is concluded that 3% vioform is a valuable addition to the medicaments at present used in this country for pyococcal dermatoses.

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THE TOPICAL USE OF VIOFORM IN DERMATOLOGY

BY

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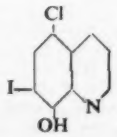
The present investigations have been prompted by the shadow of Nemesis which now looms on the dermatological horizon, threatening retribution, in the forms of drug sensitization and drug-resistant organisms, for the indiscriminate topical use of sulphonamides and antibiotics. A spate of literature has indicated that drug sensitization may follow the external application of sulphonamides (*Army Med. Dept. Bull.*, 1943; Barber, 1944; MacKenna, 1945; Phillips, 1946; Tzanck *et al.*, 1947; Council on Pharmacy and Chemistry, 1947) and penicillin (Canizares, 1945; Friedlaender *et al.*, 1946; Chu and Cutting, 1946; O'Donovan and Klorfajn, 1946; Goldman *et al.*, 1946; Hellier, 1947; Templeton *et al.*, 1947; Phillips, 1948) and so seriously interfere with their later use in lethal disorders. Drug resistance, a sequel of sulphonamide therapy and the use of many antibiotics, has been shown by Barber (1947) and Barber and Rozwadowska-Dowzenko (1948) to occur when penicillin is used; their work foreshadows many more strains of penicillin-resistant *Staphylococcus aureus*.

My attention was directed by the work of Ingram (1938) and of Sulzberger and Wolf (1942) to an entirely different group of drugs—namely, the halogen-substituted quinolines. An attempt has been made to assess whether these drugs may be used to replace the sulphonamides and penicillin in external applications so that the aforementioned undesirable sequel may be avoided. The two members of this group under investigation are "vioform" and "sterosan." This paper deals with the former drug only.

Quinoline derivatives have been used for topical application in dermatology for a number of years. "Ung. quinolor co." (Squibb) contains a mixture of 5-chlor-8-hydroxyquinoline, 7-chlor-8-hydroxyquinoline, 5 : 7-dichlor-8-hydroxyquinoline, together with 10% of benzoyl peroxide in a paraffin-lanolin base. It is useful in the treatment of sycosis barbae, impetigo contagiosa, eczematized psoriasis, and psoriasiform or lichenoid neurodermite (Peck, 1934; Carpenter, 1938; Ingram, 1938).

Vioform has the chemical formula: 5-chloro-7-iodo-8-hydroxyquinoline.



It is an amorphous, greyish-yellow, voluminous powder containing 41% of combined iodine. Tasteless and colourless, it is insoluble in water and only slightly soluble in alcohol. It has a melting-point of 156° C. and can be sterilized at 100–110° C. Light and moisture cause a darkening in its colour. Oxidizing agents are chemically incompatible.

Pharmacology.—Widespread oral use of the drug for amoebiasis has shown that it is relatively non-toxic in man (David *et al.*, 1944). *In vitro* it inhibits *Staph. aureus* and *Bact. coli* in a dilution of 0.025%, and *Pseudomonas pyocyanea* in a dilution of 0.5%.*

Mechanism of Action.—Repeated experiments have been performed to ascertain whether the antiseptic action of vioform is due to the liberation of iodine. The investigations reveal that iodine can be liberated only with great difficulty, and that free iodine plays little or no part in its antiseptic action (Bachem and Kriens, 1921; Chargaff, 1929; Jadassohn and Pfanner, 1945).

Clinical Application.—Vioform has been employed on the Continent for the last forty years, and its virtues have been extolled in the treatment of pyodermia, fungous infections, eczematous conditions, and other dermatoses (Jadassohn, 1930; Bertlich, 1939; Sulzberger and Wolf, 1942). Montigel (1910) found it a more effective antiseptic tooth-stopping dressing than iodoform. Sulzberger and Wolf (1942), after extensive clinical trials, stated it to be "one of the best anti-eczematous, mildly soothing, and antiparasitic remedies."

Types of Bases Employed and Mode of Application.—Vioform was used in this trial in a strength of 3% in a water-miscible cream† and a soft paraffin ointment. An identical cream and ointment, suitably coloured to camouflage the absence of vioform, were used as controls.

The type of application employed was determined by the characteristics of the lesions. The cream was mainly used to produce a drying effect; in dry, scaly, or lichenified lesions the greasy ointment was prescribed. Occasionally a more neutral effect was obtained by alternating the two, using the cream by day and the ointment by night. The cream was applied three or four times a day, the lesions being kept open wherever possible. The ointment was applied twice a day, and in view of its greasy staining qualities was covered with linen or calico. No other local measures were in use at the same time.

Mode of Assessment.—The only cases included in this series are those which have been adequately controlled by using the active preparation on one side of the body and a control (the ointment or cream base) on the other side. By this means spontaneous improvement becomes evident, the effect of the conveying medium is readily assessed, and aggravation by the active ingredient is apparent, except where the base itself proves irritant, thus sometimes masking any similar action of the drug concerned. Unfortunately, some disorders do not admit of this simultaneous assessment—e.g., pruritus ani—and these have been omitted. The major practical difficulty lies in persuading the patients to adhere strictly to instructions in spite of any difference in response on the two sides. Results were assessed only in terms of visible improvement.

Results

Group 1: Coccogenic Sycosis Barbae.—All these cases had received previous treatment, many with penicillin cream or ointment. A number were chronic cases complicated by seborrhoea oleosa. All were investigated for focal sepsis, and this when found was treated simultaneously. Patients were instructed to shave daily and to apply the cream after shaving, at midday, late afternoon, and night. The face was washed in the normal manner. Among 30 cases, 22 showed a definite improvement, 3 chronic cases improved temporarily and then relapsed during treatment, 1 showed equal improvement on the base, and 4 exhibited no gross change.

Table of Results

Diagnosis	Total No. of Patients Treated	No. of Patients Affected by Vioform		No. of Patients Affected by Control Base		No. of Patients who Showed no Response to Vioform or Control Base
		Improved	Aggravated	Improved	Aggravated	
Coccogenic sycosis barbae	30	22		1		7
Seborrhoeic dermatitis	22	14		5		3
Otitis externa	14	8		4		2
Pityriasis faciei simplex	2	2				
Acute vesicular and papular eczema	33	15	1	10	2	5
Gravitational eczema	18	12		4		2
Cheiropompholyx	13	3	1			9
Chronic papular and fissuring eczema	7	1				6
Impetigo	5	5				
Infantile eczema	16		3	8		5
Nummular eczema	7	4	2		1	
Neurodermatitis	5	1	1	3		
Lichen hypertrophicus	3					3
Psoriasis:						
Classical	2					2
Seborrhoeic	6	2		1		3
Pustular	2			2		
Dermatitis herpetiformis	4		1	2	1	

Group 2: Seborrhoeic Dermatitis.—These represented typical examples of the disorder with lesions in the scalp, on the face and ears, and in some cases on the trunk as well. Many of the facial lesions were eczematized. The scalp was treated in the routine manner, the vioform application being used only for the face. Of 22 cases, 14 showed a marked improvement, 5 improved equally on both sides, and 3 showed no change.

Group 3: Otitis Externa.—This group was mainly composed of patients exhibiting the signs of streptococcal otitis externa as described by Kinnear and by Mitchell. In a few the external manifestations followed an attack of suppurative otitis media, and some had a superimposed contact dermatitis. A search was made for evidence of focal infection, and where necessary this was treated. Among 14 cases, 8 showed marked improvement, 4 equal improvement on both sides, and 2 no change.

Group 4: Pityriasis Faciei Simplex.—The two children suffering from this disorder made a slow response.

Group 5: Acute Vesicular and Papular Eczema.—This comprises a mixed group of endogenous and exogenous eczema, comparable in the appearance of their eruptions. They were usually given sedative treatment by mouth. Fifteen patients showed much improvement on the vioform preparation, 10 responded equally to the vioform and the control preparation, 2 were aggravated by both, 1 improved more rapidly on the control cream than on the vioform cream, and 5 showed no improvement on either side.

Group 6: Gravitational Eczema.—Among these patients suffering from bilateral gravitational eczema without active ulceration, 12 showed much improvement, 4 equal improvement on both legs, and 2 no change.

Group 7: Cheiropompholyces.—These were all of constitutional origin. Three appeared to improve more rapidly on the vioform preparation, 1 appeared to be aggravated, and in 9 the course of the disorder was unaffected on either side, spontaneous remissions and exacerbations occurring. Concurrent sedation by mouth was used in this group.

*Information supplied by Messrs. Ciba, Ltd.

†This was supplied by Messrs. Ciba Laboratories, Ltd., and was stated to contain sodium lauryl sulphate, stearyl alcohol, spermaceti, glycerin, soft yellow paraffin, and water.

Group 8: Chronic Papular and Fissuring Eczema.—These were 7 chronic cases of endogenous eczema. One showed some improvement, the remainder no change.

Group 9: Impetigo.—Five cases cleared satisfactorily with vioform cream.

Group 10: Infantile Eczema.—The results of the treatment of this condition were unsatisfactory. Eight cases improved equally on the cream and on the cream base, 5 showed no change, and 3 displayed some irritation on the vioform cream.

Group 11: Nummular Eczema.—Four showed marked improvement; two appeared to be irritated by the vioform and one by the cream base.

Group 12: Neurodermatitis.—One showed improvement, three showed equal improvement on both preparations, whilst in one patient the base proved the more effective.

Group 13: Lichen Hypertrophicus.—In three patients no change was noted.

Group 14: Psoriasis.—In two patients with classical psoriasis no improvement could be attributed to the vioform. *In psoriasis involving the flexures (seborrhoeic)* two appeared to be improved, and four showed no change which could be attributed to the vioform. Two patients with *pustular psoriasis* found the active preparation and the vehicle equally effective.

Group 15: Dermatitis Herpetiformis.—Lesions in two patients with this disorder responded equally to the vioform cream and base, one patient was aggravated by both, and one appeared to be aggravated by the vioform cream. In view of the sensitivity of these patients to potassium iodide locally, this measure was tried at first very carefully, but the action expected from an iodide preparation was not noted.

Comments

Unfortunately, vioform is yellow and it stains. When dispensed in a water-miscible base the staining tendency is less marked. It darkens on exposure to air; this does not seem to interfere with its therapeutic efficiency. A few patients stated that on application they experienced a mild burning sensation, which quickly disappeared; when there was intolerance this symptom was more pronounced.

Vioform proved antipruritic in eczematous conditions and soothing in the treatment of contact dermatitis; it showed a marked antiseptic action in pyodermia and secondarily infected dermatoses. In the media used it was found to be well tolerated.

Conclusions

The effect of 3% vioform in a water-miscible base or in petroleum jelly has been assessed under carefully controlled conditions on a variety of dermatoses in 176 patients. It proved a useful local application in the treatment of the following conditions: coccogenic sycosis barbae, seborrhoeic dermatitis, otitis externa, acute vesiculo-papular eczema, gravitational eczema, impetigo, and, occasionally, in nummular eczema. The incidence of cases of intolerance was low (4.5%). This investigation suggests that vioform merits more extensive use in these conditions.

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DISSEMINATED SCLEROSIS IN SOUTH AFRICA

ITS RELATIONSHIP TO SWAYBACK DISEASE AND SUGGESTED TREATMENT

BY

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It has long been believed, and rightly, that disseminated sclerosis very rarely occurs among the white population of South Africa and that it is most rare among those white people who have been born and bred there. Indeed, some physicians deny that it occurs at all in such people. These opinions, however, were based on individual clinical experience; there were no reliable and exhaustive figures. Therefore the available evidence relating to the incidence, geographical distribution, etc., of the disease among white South Africans during the last ten years has been collected and assessed. It may be said here that disseminated sclerosis is unknown in the native and other coloured peoples of the country.

Incidence and Geographical Distribution

In order to discover the incidence, etc., of the condition it was decided to search the medical records of all the main hospitals in the country for the last ten years. Records of a diagnosis of disseminated sclerosis could be found only at Groote Schuur Hospital, Capetown, at Johannesburg General Hospital, and at the Pretoria Hospital—in fact at the three university teaching hospitals. In addition, three isolated cases—two at Port Elizabeth and one at Durban—have been reported. The cases are here summarized. In all cases, unless otherwise stated, the Wassermann reaction was negative and the blood count normal.

Groote Schuur Hospital, Capetown.—Between 1938 and 1948 eight patients were diagnosed as suffering from disseminated sclerosis. These cases are summarized in Table I. Two of these patients were white women born in South Africa (one lived at Capetown and one at Vryburg); one was a South African who had spent six months abroad; and two others were South Africans of German origin, though in the case of one of these the diagnosis was doubtful. Of the remaining three cases, in one the diagnosis was probably wrong and in the other two the records were incomplete.

Johannesburg General Hospital.—In the files at Johannesburg General Hospital 22 cases were classified as suffering from disseminated sclerosis between the years 1938 and 1948. The cases are summarized in Table II. Five of these patients were indigenous white South Africans, 14 were immigrants, and in the three others the diagnosis was in my opinion definitely

mistaken. These last three cases will not be considered further. Of the five indigenous patients, the diagnosis is considered to be correct in three and doubtful in two.

TABLE I.—*Cases in Capetown*

Case	Sex	Age	Race	Diagnosis
C.1	F.	46	S.A.	Symptoms of weakness in legs for 20 years, periods of remission; nystagmus, intention tremor; posterior column and pyramidal tract involvement. Seen by me. (DS)
C.2	F.	40	S.A.	Symptoms of paraesthesia on trunk, a visual episode; dragging of legs, with remissions, for seven years. Sensory loss, pyramidal tract and posterior column involvement. (DS)
C.3	F.	35	S.A.(a)	In England for six months when aged 8. A five-years history, with remissions, of diplopia, tingling in hands, and weakness of both legs. Nystagmus, temporal pallor, and pyramidal tract involvement. (DS)
C.4	F.	54	IMM.	Of German origin. Temporary blindness 20 years ago; tremor, clumsiness, weakness right leg, loss of sensation in foot, remissions. Pallor of temporal half of optic disks; cerebellar, sensory, and pyramidal tract involvement. (DS)
C.5	F.	30	IMM.	Of German origin. Giddiness and anaesthesia of right side of face. On examination no lesion of central nervous system. (Doubtful)
C.6	F.	47	S.A.	Twelve years ago had a temporary total paralysis and severe pain affecting both legs; a year later the right arm was similarly affected; a year ago blindness of right eye with pain. No physical signs. (Not DS)
C.7				Case records incomplete
C.8				Case records incomplete

S.A. = South African white who has never been abroad. S.A.(a) = South African who has been abroad. IMM. = Immigrant. DS = Disseminated sclerosis diagnosed.

Pretoria Hospital, Pretoria.—The records reveal one definite case of disseminated sclerosis in an immigrant who entered the country when he was 2 years old, and two doubtful cases (Table III).

Port Elizabeth.—Two cases were found here. The first was that of a woman, aged 60, who was born in South Africa but had spent the greater part of her life up to the age of 39 in England. First one eye then the other became affected by temporary loss of vision more than 20 years ago while in England. Since then she had had attacks of weakness in the legs and arms, with remissions, and hyperaesthesia of the left leg. On examination a classical case of disseminated sclerosis was seen: nystagmus; temporal pallor; and cerebellar, pyramidal tract, posterior column, and sensory involvement.

TABLE II.—*Cases in Johannesburg*

Case	Sex	Age	Race	Diagnosis
J.1	M.	39	S.A.	Weakness in right leg; nystagmus, optic pallor, intention tremor, posterior column and pyramidal tract involvement. (DS)
J.2	M.	40	S.A.	Unsteadiness of gait, hyperaesthesia of right thigh and weakness of right leg; nystagmus and pyramidal tract involvement. (DS)
J.3	F.	43	S.A.	Blurring of vision, paraesthesia, and weakness of both legs; remissions; urinary incontinence. Temporal pallor, intention tremor, sensory loss and pyramidal tract involvement. (DS)
J.4	F.	37	S.A.	A two-years history of difficulty with micturition and dragging of feet. No physical signs. (Doubtful)
J.5	M.	27	S.A.	Cramp in legs. (Doubtful)
J.6	M.	50	IMM.	Temporary blurring of vision six years ago; now drags the right leg. Nystagmus, temporal pallor and pyramidal tract involvement. (DS)
J.7	M.	30	IMM.	Loss of sensation in finger-tips of right hand, drags the right leg; remissions. Sensory loss in fingers and pyramidal tract involvement. (DS)
J.8	F.	37	IMM.	Weakness of both legs and precipitancy of micturition; remissions. Pyramidal tract involvement. (DS)
J.9	F.	45	IMM.	Twenty years ago had temporary blurring of vision in one eye. Weakness in right arm and right leg. Pyramidal tract involvement. (DS)
J.10	F.	47	IMM.	Blurring of vision a few years ago; weakness in right arm and right leg. Nystagmus and pyramidal tract involvement. (DS)
J.11	M.		IMM.	Insufficient details available
J.12	F.	31	IMM.	Insufficient details available
J.13	M.	38	IMM.	History suggestive of disseminated sclerosis, but details of examination are insufficient
J.14	F.	43	IMM.	Weakness right leg and difficulty in starting micturition. Insufficient details available
J.15	M.	35	IMM.	Not disseminated sclerosis
J.16	F.	40	IMM.	History suggestive of disseminated sclerosis, but details of her physical examination are insufficient for diagnosis
J.17	M.	48	IMM.	Insufficient evidence
J.18	M.	65	IMM.	Weakness in both legs and difficulty with micturition. Pyramidal tract and posterior column involvement. W.R. positive. A syphilitic cause for the symptoms has not been excluded
J.19	M.	31	IMM.	Weakness in left leg. Left Babinski response extensor; W.R. positive. Again a syphilitic cause has not been excluded

TABLE III.—*Cases in Pretoria*

Case	Sex	Age	Race	Diagnosis
P.1	M.	44	IMM.	Immigrated from Australia when 2 years old. In the last nine years attacks of transient blindness and hemiparaesthesia. Nystagmus, intention tremor, ataxia, and pyramidal tract involvement. (DS)
P.2	M.	53	S.A.	Fifteen years ago pyrexia and polyarthritis. Agglutinations for *Brucella abortus* positive. He developed ataxia with nystagmus and Rombergism, is occasionally incontinent of urine, and has transient paraesthesiae. There is pyramidal tract, posterior column, and cerebellar involvement. This seems to be a case of focal demyelination following brucellosis
P.3	M.	59	S.A.	Account translated from *Geneeskundige Tydskryf*. Thirty-five years ago he had weakness and loss of sensation in both legs, with retention of urine; lumbar laminectomy was performed; a short time later he had double vision for a few days. Six years ago he developed a sudden hemiplegia, since when he has been bedridden. On examination there was right-sided hemiplegia with bilateral pyramidal tract involvement; the posterior columns were normal. In my opinion there is not enough evidence to diagnose disseminated sclerosis. The hemiplegia was probably due to a cerebral thrombosis

The second patient was the brother of the first case. He was also seen by me. He developed a slowly increasing weakness, starting at the extremities, over a period of three years; this increased until he died following paralysis of his intercostal muscles. There was a bilateral extensor response, with absent reflexes and slurring of speech. In view of the fact that his sister had disseminated sclerosis this may have been a "forme fruste" of the disease.

Durban.—Dr. J. Drummond, medical specialist, has informed me that he treated a case of disseminated sclerosis in a South-African-born girl who had not been abroad. Unfortunately the records have been lost, and she has long been dead. As the records are not available, this case will have to be included in the "doubtful" group.

Comparison with England and Wales

My opinion, based on the above analysis, is that disseminated sclerosis does occur among South Africans who have never been abroad, but the incidence is extremely low. There have been two cases at Groote Schuur Hospital, Capetown, both women—one who had spent all her life in Capetown, and one from Vryburg—and three cases at Johannesburg General Hospital—one from Lichtenburg, one from Rouxville, Transvaal, and one of unknown address: five cases in all, scattered throughout the Union, and out of a white population of 2,400,000. This number is too small to enable one to draw any conclusions concerning the geographical distribution of the disease. There may of course have been other cases, but an obscure long-lasting disease would usually be discussed by the local doctor and eventually sent to a specialist in one of the big centres; and because of its rarity the specialist would normally send the case to hospital for investigation.

In South Africans who have been abroad two cases were diagnosed at Capetown, five at Johannesburg, one at Pretoria, and one at Port Elizabeth—making nine cases in all (Table IV). Of the doubtful cases in South Africans who have never been abroad there are two at Johannesburg, two at Pretoria, and one at Durban—five in all. There are ten doubtful cases among South Africans who have been abroad—one at Capetown and nine at Johannesburg. Probably the majority of these patients do suffer from disseminated sclerosis. A striking factor about all cases is the mildness of the disease; only one "doubtful" case is bedridden.

It has already been noted that the disease is unknown among the native and coloured peoples of South Africa. Two cases have been reported in East African natives.

TABLE IV.—*Classification of Cases Diagnosed as Suffering from Disseminated Sclerosis in South Africa*

	Capetown	Johannesburg	Pretoria	Elsewhere	Total
Disseminated sclerosis in South Africans who have never been abroad	2	3	0	0	5
Disseminated sclerosis in South Africans who have been abroad, or immigrated	2	5	1	1	9
Doubtful cases in South Africans who have never been abroad ..	0	2	2	1	5
Doubtful cases in South Africans who have been abroad, or immigrated*	1	9	0	0	10

Brain (1940) gives statistics on the incidence of disseminated sclerosis. His figures are for the year 1930. He estimates the incidence as 160 per million for England and Wales. His method of computation, based on that of Bramwell, assumes an average expectation of life of eight years after diagnosis of the condition—in my opinion a very modest estimate. Therefore the annual number of deaths from disseminated sclerosis multiplied by eight million divided by the population is the incidence per million. Later figures give approximately the same incidence. Deaths from disseminated sclerosis in 1935 were 781; in 1938, 764; and in 1945, 760. The population of England and Wales in 1942 was 42,600,000. On the continent of Europe the disease is widespread in Germany, France, Scandinavia, Austria, and especially in Switzerland.

The figure of 160 per million in England and Wales may be compared with the South African figure of five cases out of an indigenous white population of 2,400,000.

Swayback Disease of Lambs

Campbell *et al.* (1947) reported the occurrence of four cases of disseminated sclerosis among seven workers engaged on research into swayback disease of lambs. This is a demyelinating disease, known to be associated with a deficiency of copper in the soil on which the affected lambs are bred, or with a defective absorption of copper.

In order to obtain some information at first hand about swayback disease I visited Onderstepoort Veterinary Research Station and consulted Dr. de Kock, the Director, and Dr. Schultz, one of the research workers concerned with this disease.

Swayback disease is, as far as present knowledge goes, confined in South Africa to three small areas—a small coastal strip around Mossel Bay from Knysna to Bredasdorp, along Saldanha Bay up to Vredenberg, and around Stellenbosch. It will be noticed that the five proved cases of disseminated sclerosis in native-born white South Africans are not confined to these "swayback" areas.

South African farmers call swayback disease "Lamkruis," which means paralysis of the lumbar region; also "Swaaigat," or swaying back; and "Litsiekte," or joint disease. Adult sheep are seldom affected by it, but newborn lambs commonly are. The incidence is never high, although it does vary from year to year. Affected lambs are unsteady in their gait and spastic in their movements. Post-mortem examination often discloses cavities in the cerebrum filled with a yellowish fluid. The cerebellum is always involved, though there is never cavitation there. Histological examination of the central nervous system reveals a widespread round-cell infiltration and demyelination. Much more detailed work is still required on the pathology and histology of the disease in South Africa.

Relationship between Swayback Disease and Copper Deficiency.—For many years the farmers in the "swayback" areas have given pregnant ewes copper sulphate solution by mouth in order to prevent the occurrence of the disease in their lambs. Further, it has been shown at Onderstepoort that there is a relationship between the copper content of the grazing and the presence of the disease. In the Karroo areas, where swayback disease is unknown, the ruminal copper content (which is an index of the copper content of the soil) is 13 parts per million—a high proportion; but in the coastal areas, where the disease does occur, it is only 5 parts per million. This relationship has also been noted in England; and there, too, copper sulphate is given in certain areas to pregnant ewes as a means of prophylaxis against the disease. Less commonly, but successfully, it has been used in the treatment of established cases. A point of interest is that in the Karroo a form of jaundice occurs in sheep, known as enzootic icterus, with gross haemolysis and haematuria. Post mortem, the copper content of the liver is found to be over 200 times the normal. Enzootic icterus seems to be a form of copper poisoning, although why the copper, which is normally fixed in the bones, should be suddenly mobilized is not known. Experiments are now being carried out to find if copper can be mobilized in the same way as lead—by giving acid salts. This research is of particular interest because of the possible toxic results of copper therapy in man.

Relationship between Disseminated Sclerosis and Swayback Disease.—No explanation can yet be given for the occurrence, as reported by Campbell *et al.* (1947), of four cases of disseminated sclerosis among seven workers engaged on research into swayback disease. A low copper content of their food could hardly be more than a predisposing factor, as in a highly developed country such as England the copper content of the diet cannot be supposed to vary much from one region to another, while the incidence of the disease among the general public is certainly much less than it was among these research workers.

Margulis, Soloviev, and Shubladze (1946) claim to have isolated a virus responsible for disseminated sclerosis; and perhaps, therefore, an infective factor is common to both diseases, a relative copper deficiency in the host being the predisposing factor. A possible explanation of the observation of Campbell *et al.* would then be that a copper content of the body sufficient to protect against chance infection was not sufficient to do so when the infection was massive. This of course is purely hypothetical; but it is not at variance with the known facts and does provide a hopeful basis for future work on the problem.

Suggested Form of Treatment for Disseminated Sclerosis

Whatever the precise relationship between the two diseases may be, the observation of Campbell *et al.*, supported by the facts recorded in this article, does strongly suggest that there is some relationship, and that it resides most probably in there being a common causative factor (or factors). It is therefore reasonable to suppose that a form of treatment effective against one disease will be effective against the other. Also, there is at present no form of treatment for disseminated sclerosis that is of proved value.

Thus, while mass prophylaxis against disseminated sclerosis by ensuring an adequate copper content of the diet is neither indicated nor practicable at the moment, there is in my opinion much to be said for treating established cases with copper sulphate. A daily dose of ¼ gr. (16 mg.) is suggested. Even bigger doses than this have been found to be safe when given therapeutically over a period of many months to the four research workers who

contracted the disease. However, in view of the occurrence of enzootic icterus in sheep from copper poisoning, the possibility of overdosage with copper in man must be borne in mind.

Summary

Campbell *et al.* have recorded a striking incidence of disseminated sclerosis among workers engaged on research into swayback disease.

In South Africa disseminated sclerosis is very uncommon. So also is swayback disease; and except in those small areas where it occurs the copper content of the soil is high. Furthermore, treatment with copper is well known to be an effective means of preventing the disease and also of treating it.

It is therefore suggested that copper therapy of established cases be given a trial.

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THE USE OF PROCAINE PENICILLIN IN CHILDREN

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A penicillin preparation that will give a bacteriostatic blood level between infrequent injections has obvious advantages. There have been many attempts to increase the time interval between injections by suspending soluble penicillin in various media such as beeswax and peanut oil: these preparations have not been satisfactory.

Salivar *et al.* (1948) described the formation of an insoluble compound by the chemical combination of procaine and penicillin in equal molecular proportions. This substance dissociates gradually to liberate soluble penicillin, and when suspended in oil gives prolonged blood-serum penicillin levels in animals (Hobby *et al.*, 1948).

Several reports have been published on the use of an oil suspension of procaine penicillin in man. Since a single daily injection is aimed at, an analysis of the recorded 24-hour blood-serum penicillin levels has been made and is given in Table I. The only paper that is concerned with children is that of Carson *et al.* (1949). It will be seen that, in the larger adult series, 34 of 62 patients (Hewitt *et al.*, 1948), 33 of 78 patients (Thomas *et al.*, 1948), and 21 of 29 patients (Jones and Shooter, 1948) gave penicillin levels of over 0.03 unit per ml. 24 hours after the injection of procaine penicillin.

This communication reports an investigation at the Children's Hospital, Sheffield, of the serum penicillin levels obtained in 50 children following the administration of procaine penicillin in arachis oil. Twenty-five were referred from the casualty department, and the remainder were cases in bed.

TABLE I.—*Summary of Published Work*

Reference	Dose in Units	Type of Patient	No. of Patients	No. of Patients with 24-hr. Serum Levels u./ml.			Ratio of Cases Giving 24-hr. Levels of Over 0·03 u./ml.
				<0·03	0·03–0·2	>0·2	
Herrell *et al.* (1947)	300,000	Mixed	10	1	6	2	8 of 9
Boger *et al.* (1948)	300,000	Ambulatory	9	8	1	0	1 of 9
	300,000	In-patients	10	4	6	0	6 of 10
Carson *et al.* (1949)	150,000 –11 Kg.; 300,000 over 11 Kg.	Normal children	10				9 of 10
		Bed cases	41				"The great majority" (?40 of 41)
Hewitt *et al.* (1948)	300,000	In-patients	62	28	30	4	34 of 62
	600,000						
Hobby *et al.* (1948)	300,000	Ambulatory	3	0	3	0	3 of 3
Jones and Shooter (1948)	300,000	Mixed	29	8	16	5	21 of 29
Sullivan *et al.* (1948)	300,000	In-patients	17	1	14	2	16 of 17
	600,000	,,	2	0	2	0	2 of 2
	900,000	,,	1	0	0	1	1 of 1
	1,200,000	,,	1	0	0	1	1 of 1
Thomas *et al.* (1948)	300,000	—	78	—	—	—	33 of 78

Method

The preparation of procaine penicillin in arachis oil is viscid, and accurate measurement is difficult. Accordingly empirical dosage on an age basis was adopted. The dosage was: 75,000 units (0.25 ml.) to children under the age of 18 months, 150,000 units (0.5 ml.) to children between 18 months and 5 years, and 300,000 units to older children. Eight of the youngest age group received 150,000 units. The injections were made into the vastus lateralis. The penicillin serum levels were estimated by the capillary-tube method described by Fleming (1943), using whole blood inoculated with Richard's strain of *Streptococcus pyogenes*. The blood used for assay was collected in Wright's capsules and was taken at varying times. In eight children the levels in the first few hours were followed to assess the rapidity of absorption. In all cases the serum levels were estimated at the end of 24 hours.

Results

In the eight cases which were observed during the first few hours after injection of procaine penicillin the penicillin serum levels rose rapidly, to reach a peak between two and six hours. Of a further eight cases in which the serum level was estimated 12 hours after injection, all had a concentration greater than 0.25 u./ml.

An analysis of the 24-hour penicillin serum levels is presented in Table II. In 29 of the 50 patients the 24-hour levels were above 0.03 u./ml. Of the 16 children under 18 months, six of the eight given 75,000 units and seven of the eight given 150,000 units had a 24-hour level over 0.03 u./ml. Of the children over the age of 18 months, 16 of 34 had a level above 0.03 u./ml. In this group 11 of 19 in-patients showed levels over 0.03 u./ml. compared with five of 15 out-patients.

TABLE II.—*Analysis of the 24-hour Blood Penicillin Level on 50 Children Following Intramuscular Injection of Procaine Penicillin*

Age	Dose Units of Penicillin	No. of Patients	Patients with 24-hr. Levels over 0·03 u./ml.
0–17 months	75,000	8	6
	150,000	8	7
18 months–4 years	150,000	16	9
5 years–15 years	300,000	18	7
In-patients: 18 months–15 years		19	11
Out-patients: 18 months–15 years		15	5

Thirty-six children received a further injection at 24 hours, and 26 of these showed an adequate concentration at 48 hours. Twenty-three were given a third injection at 48 hours, and 19 of these gave a level of over 0.03 u./ml. at 72 hours. The children presenting a low level after a second injection were not always those having a low level at 24 hours.

No patient showed a general reaction to the injection. In one child there was a localized swelling at the site of injection which resolved in two days.

Discussion

This study was confined to the investigation of serum penicillin levels, and no attempt was made to relate clinical change to the concentrations obtained. We have assumed that a minimum bacteriostatic serum level of 0.03 u./ml. is required. Although this level is that most generally accepted, the minimal penicillin level approved in some studies of procaine penicillin varies from 0.1 u./ml. (Carson *et al.*, 1949) to 0.01 u./ml. (Hewitt *et al.*, 1948); the direct comparison of results is therefore difficult.

The results that we have obtained are very similar to those reported in adults—i.e., that penicillin is present in the blood stream in significant amounts in approximately half of the cases 24 hours after an injection of procaine penicillin in arachis oil (see Table I).

A difference in 24-hour serum levels between ambulatory patients and in-patients was seen in our cases. These groups are small, but when considered with the cases described by Boger *et al.* (1948) they yield results which are just significant and indicate a more rapid absorption and excretion in ambulant cases. This point is important, as this preparation is most likely to be used in ambulant patients.

The results of Carson *et al.* (1949) differ a little from ours. The dose of penicillin that they gave to their children was approximately twice that given in the present series. Although they noted no exact correlation between serum penicillin titres and the amount of penicillin administered, the levels maintained at 24 hours were higher than ours, whereas the levels they obtained during the first six hours after injection were lower. This discrepancy may be due to the use of a penicillin preparation of a different particulate size.

By greatly increasing the dose of procaine penicillin it may be possible to attain a reliable 24-hour serum penicillin level. Higher doses have not been given in this series, because of the bulk of the injection, the possible toxic effects of absorbed procaine, and the inhibitory action on sulphonamides of procaine hydrolysed to para-amino benzoic acid (Carson *et al.*, 1949).

We conclude that procaine penicillin, owing to the variation of the 24-hour serum penicillin levels seen in this series and those of others, is not suitable for once-daily injection.

Preliminary trials with a procaine penicillin preparation containing aluminium stearate indicate that it may maintain more reliable blood levels.

Summary

The serum penicillin concentration after the intramuscular injection of procaine penicillin in arachis oil has been followed in 50 children.

Procaine penicillin was absorbed rapidly, but the penicillin titre in the blood after 24 hours was extremely variable.

Procaine penicillin in arachis oil is not an ideal preparation for the administration of penicillin by once-daily injection in children.

In-patients in this investigation were under the care of Professor R. S. Illingworth. We would also like to thank Dr. S. Doxiadis, of the Department of Child Health, and Professor E. J. Wayne, of the Department of Pharmacology, University of Sheffield, for the interest they have taken in this investigation.

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ACUTE PORPHYRIA AND ASSOCIATED ELECTROLYTE CHANGES

BY

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The porphyrias are attracting increasing interest in Britain, though most of the work on the subject still appears in Scandinavian and American literature. The history of the porphyrias is reviewed by Nesbitt (1944).

Acute and latent porphyria are different phases of one disease, a chronic disorder of pyrrole metabolism which is sometimes familial. The aetiology remains unknown. Barbiturates, often cited as precipitating factors of the acute phase, seem to have been given following the onset of clinical manifestations in most cases. Symptoms usually appear between the ages of 20 and 45. The chemistry and reactions of the porphyrins have been reviewed by Dobrine and Rhoads (1940), Prunty (1946), Jörgensen and With (1947), and Discombe (1948).

The case of acute porphyria here presented showed most of the classical features of the disease. The presence of testicular atrophy, not previously reported, may be coincidental. Some cases may show only some of these features and urinary discoloration may be inconspicuous, so that only increasing awareness of the condition and of the tests described by Discombe will lead to early and more frequent diagnosis.

Chronic porphyria and porphyrinuria, distinctly separate entities from acute porphyria, are respectively described by Mason, Courville, and Ziskind (1933) and by Rimington (1943).

Case History

A man aged 20 was admitted to a Royal Naval hospital on Nov. 14, 1947, with abdominal pain of four days' duration. His father had suffered from bouts of abdominal pain for several years and died at the age of 43 after a "cold" appendicectomy. His mother, two brothers, and a stepbrother by the same mother were well. Their urine showed no porphobilinogen or spectroscopic evidence of porphyrins. His alcohol consumption was negligible, and there was no evidence that he had taken drugs at any time.

He had been quite well until June, 1947, when he complained of periumbilical pain, vomiting, and constipation, and two days later (June 11) he was admitted to hospital. Milk symptoms continued for two weeks. The day after admission his pulse rate rose to 90–100. It remained so for three weeks and then fell to 85–90. The only findings were a mild anaemia

and achlorhydria. He was symptom-free on discharge on July 25.

Apart from the loss of some 10 lb. (4.5 kg.) in weight he remained well until Nov. 11, when he was admitted on the fourth day of this illness. He complained of constant aching pain in the lower abdomen. He had vomited thrice and had obstinate constipation. The temperature was 97.4° F. (36.3° C.) and pulse 80. He looked thin and ill. The sclerotics had an unusual brownish tint, not due to bilirubinaemia. There was no pigmentation of the skin. He had generalized abdominal tenderness and considerable borborygmi. The testicles were small, measuring about 2 cm. in their long diameter. No other abnormality was noted. The temperature remained normal throughout the illness.

On the sixth day his pulse was 80. He was restless at night and was found sleep-walking. The next two days his pulse was 80–100 and the blood pressure 140/90. He was very miserable, lying curled up and complaining of his pain. All tendon-jerks were found to be sluggish. On the ninth day, after being delirious during the night, he had hallucinations. Acute porphyria was at this time first considered as a diagnosis on the combination of abdominal and nervous symptoms. The urine was macroscopically normal, but no chemical tests were done. The nightly administration of pentobarbitone ("nembutal") was stopped. On the 10th and 11th days his pulse was 90–120 and the blood pressure 115/85. Delirium and hallucinations continued, but pain had subsided. The urine on the 11th day had a pinkish tinge.

Examination with a Hartridge reversion spectroscope showed no definite absorption bands (but had a thick layer been used as recommended by Chandler, Harrison, and Rimington (1939) a positive result might have been obtained). The porphobilinogen test was not done. A psychiatrist diagnosed schizophrenia and advised transfer to a psychiatric hospital. This was done, but as it was still considered that the diagnosis was acute porphyria urine was kept for further examination. In three days this became dark brown in colour, and spectroscopy showed the absorption bands of acid porphyrin.

He was brought back to the general ward on the 16th day. He was mentally clear, and had noticed weakness of the arms, with difficulty in sitting up, for the previous two days. The urine appeared normal when passed. The pulse was 80–120 and the blood pressure 120/80. There was only flickering contraction of deltoid and pectoralis major muscles, with slight weakness of all the arm muscles. Biceps-jerks were absent. Flexion of the spine was very weak. On the 20th day the knee- and ankle-jerks were absent and there was some weakness of the legs.

Between the 22nd and 24th days he was again restless and delirious. Impaired pain sensation was found on the inside of the thighs. His condition was critical between the 24th and 28th days, and his pulse rate rose to 140. Thereafter there was very gradual improvement. By the 36th day he was mentally alert, there was some increase in power in arms and legs, the knee and ankle reflexes were normal, and no sensory changes were found. The pulse was still 110–135. By the 55th day the pulse was 85–100 and the blood pressure 115/80.

In the 10th week there was transient nausea and abdominal pain and a phase of hypotension; the blood pressure was 95/70. By the 17th week there was still considerable weakness of the deltoids, and the pulse rate ranged between 85 and 100. During the 21st week he had another attack of abdominal pain lasting about a week. Twenty-six weeks after the onset he was gaining weight and his arms were improving in strength.

Porphobilinogen and porphyrins were found in the urine throughout the period following diagnosis. Detailed examination of the porphyrins was not undertaken.

Subsequent History.—On July 3, 1948, he was admitted to hospital under the care of Dr. G. A. Emmerson with a recurrence of abdominal pain and severe insomnia. Hypertension and tachycardia were present and low serum sodium and chlorides were recorded. His abdominal pain gradually subsided, but the pulse rate rose to 110–130. On July 14 he complained of hoarseness. Phonation appeared to be weak, and there was weakness of extension of the right wrist. He died suddenly and unexpectedly on the morning of July 16. No barbiturates had been administered.

Post-mortem examination showed pulmonary oedema and some bronchopneumonia and a flabby, thin myocardium. The testicles were not examined. Dr. F. T. G. Prunty reported on some of the tissues sent for examination. The lungs showed bronchopneumonia. There was some old and active tuberculosis in a tracheo-bronchial lymph gland. The liver showed early central necrosis in some lobules, and the liver cells contained brownish pigment granules not yet identified. The kidneys contained epithelial debris in some capsular spaces and there was capillary congestion. The convoluted tubules were the site of cloudy swelling, and in some places atrophy and pyknosis of nuclei had occurred. The adrenals were greatly hypertrophied, and the cells of the fasciculata in places gave evidence of lipoid depletion.

Investigations.—Body weight: 13th day, 104 lb. (47.2 kg.); 27th day, 91 lb. (41.3 kg.); 40th day, 88 lb. (39.9 kg.); 75th day, 89 lb. (40.4 kg.); 110th day, 92 lb. (41.7 kg.). Urinary creatinine: 5th to 7th weeks, 0.5–1.4 g. per 24 hours. Urinary creatine: 42nd day, *nil*. Wassermann reaction negative. Fourth week: Serum bilirubin less than 0.5 mg. per 100 ml.; cephalin flocculation and Takata–Ara reaction negative; alkaline phosphatase, 3.8 King–Armstrong units. Quick's intravenous hippuric acid test: (30th day) excretion, 0.78 g. hippuric acid (as sodium benzoate); (107th day) excretion, 0.97 g. hippuric acid. Serum proteins (42nd day), 7.6 g.—albumin 5.3 g., globulin 2.3 g. Glucose-tolerance test (35th day): fasting, 74 mg.; ½ hour, 110 mg.; 1 hour, 158 mg.; 1½ hours, 146 mg.; 2 hours, 128 mg. per 100 ml. White blood count, 7,900–14,000 per c.mm. Red blood cells:—9th day: red cells, 4,790,000: Hb, 12.6 g. 17th day: red cells, 4,670,000; Hb, 12.7 g.; P.C.V., 46/100; M.C.V., 98.5 $c\mu$; M.C.D., 7.4 μ. 42nd day: red cells, 5,130,000; Hb, 14 g.; P.C.V., 50/100. 79th day: red cells, 4,600,000; Hb, 12.6 g.; P.C.V., 46/100; M.C.V., 100 $c\mu$. Electrocardiograms showed left axis deviation and very low T waves in leads I and CR4.

Electrolyte and Renal Function Changes in Acute Porphyria

The occurrence in acute porphyria of low serum sodium and chloride was described by Abrahams, Gavey, and Maclagan (1947) and Linder (1947). They also noted that despite low serum levels the urine still contained considerable quantities of chlorides. Both suggested that there was adrenal insufficiency.

In the present case low serum sodium and chloride levels were confirmed. The patient was placed on a special diet with a varied chloride intake. Desoxycortone acetate and adrenal cortical extract were given in addition for two periods. During the investigation there was no vomiting, diarrhoea, or excessive sweating. The urinary excretion of chloride was estimated daily and the serum levels were estimated at intervals (see Table). Sodium balance might have been of greater value, but chloride estimations taxed laboratory facilities considerably less.

It was found that the chloride output was directly proportional to the intake, and that cortical extract and desoxycortone acetate had no effect on this. During the first period of administration the patient's condition was deteriorating, and during the second period spontaneous improvement had already started. During both periods there was a rise in serum sodium, but this seemed to be part of a gradual rise that took place throughout the period of observation rather than an effect of drug administration. Chloride levels showed considerably less change throughout. Potassium had fallen before the administration of desoxycortone acetate, and the initial high level may have been produced by increased tissue breakdown, as there was a pronounced loss in weight at this time. Dehydration was not obvious clinically, and red-cell estimations suggested its presence about the 42nd day only. The alkali reserve was normal throughout. These findings indicate that

Table showing Chloride Estimations and Serum Levels

Day:	17	18	19	20	21	22	23	24	25	26	27	28	39	47	53	57	64	71	79	107
Fluid intake (litres)		2·50	2·35	2·55	2·27	1·48	3·10	2·30	3·10	2·45	1·94	1·94								
Urine vol. (litres)	1·01	1·13	1·65	1·90	1·88	1·64	?	2·02	1·82	2·15	?	2·10								
Chloride intake (as g. NaCl)	2·75	4·10	4·75	14·5	16·0	11·3	20·5	14·0	18·0	16·5	12·4	12·3		10+						
Urine Cl (as g. NaCl)	3·8	4·4	4·75	6·5	10·5	12·4	?	19·3	17·8	15·6	?	20·6								
Serum (mg. per 100 ml.) Na		225					230					244		265	280	282	280	320	330	325
K		25					20					19·4		21·4	21·6			20·0	18·2	
Ca		7·5					8·1							9·8	10·0	10·0		9·8	10·0	
Cl as NaCl		495		505			495					495	500	490	515	495	495	520	528	490
HCO_3 as vol. CO_2		69		72			69					73		65	72	74		65·5	67	
PO_4														4·4	4·0	4·05		3·96	3·65	
Urea		50		52			43					43	46	39	26		28	68	32	38
Pulse range	120 80	110 90	110 98	110 98	120 115	120 100	120 105	140 110	140 120	135 110	135 120	125 115	120 105	110 100	100 90	95 85	110 100	90 80	105 95	100 85
Blood pressure		120 80		135 110		135 110		125 95	120 90	125 95	115 85	120 95	120 85	120 80	125 90	115 80	105 70	110 80	110 80	

23rd to 27th days: 10 mg. of desoxycortone acetate were given by injection daily. 48th to 53rd days: 10 mg. of desoxycortone acetate plus 5 ml. cortin *B.P.C.* were given daily. A total of 500 mg. of pantothenic acid was given intramuscularly between the 57th and 70th days.

adrenal deficiency played no part in the production of the electrolyte picture. This is in harmony with the post-mortem findings, which suggested adrenal overactivity rather than underactivity.

Broch (1945), in a varied collection of conditions, found similar electrolyte changes without any appreciable response to salt therapy. He could find no harmful effect attributable to the electrolyte changes in themselves, and warned of the danger of giving intravenous saline, in the absence of dehydration, in an attempt to correct the electrolyte levels.

Oliguria and a moderately raised blood urea are very often found in acute porphyria and are usually attributed to circulatory disturbance. Albuminuria occurs in the minority and is usually slight. It was absent throughout in the present case. Water balance and serum-urea levels are shown in the Table.

The urea clearance test on the 58th day showed 60% of average normal function in the first hour and 62.5% in the second hour, on the 78th day 64% and 56%, and on the 107th day 58% and 51%. Thus in this case there was evidence of relatively persistent renal disorder. The findings suggest that attention should be directed to the kidneys for the explanation of the alteration in serum electrolytes. That the kidneys are responsible is perhaps further supported by the findings in a recently observed case, not yet fully investigated, in which only minor changes in serum electrolytes were found and renal function appeared to be normal.

Pantothenic Acid Deficiency and Porphyria

Liver and vitamin B have been recommended for acute porphyria, but little improvement attributable to their administration has been recorded.

Pantothenic-acid deficiency in animals results in failure to grow, porphyrin deposits on whiskers, gastro-intestinal symptoms, tachycardia, prostration, neurological changes, and coma, associated with low blood chloride and raised urea. Post mortem there is myelin degeneration of the nervous system, degeneration of the liver, adrenal cortical exhaustion, and renal tubular degeneration (Deane and McKibbin, 1946). No defect in sodium conservation is revealed (McQueeney, Ashburn, Daft, and Faulkner, 1947). In this state there is at least superficial resemblance to acute porphyria. Further, it was shown that pantothenic acid will reduce or abolish porphyrin excretion produced by drugs (Hoesch, 1947). Its effect in acute porphyria was not studied.

In the present case 500 mg. of pantothenic acid was given by intramuscular injection between the 57th and 70th days. There was no appreciable change in the rate of clinical improvement or in the pulse and blood pressure. It was not practicable to assess the quantitative excretion of porphyrins, but the depth of colour produced in the porphobilinogen test, though of little value in assessing quantitative excretion, showed no appreciable variation. Between the 64th and 71st days the sodium level, previously steady, rose from 280 to 320 mg., and this level was maintained. There was a temporary rise in urea (see Table).

Thus the only evidence of a beneficial effect from pantothenic acid was given by the serum sodium level. Whether this was therapeutic or coincidental can be assessed only by its trial earlier in a crisis. That a deficiency of the vitamin is a factor in precipitating a crisis seems unlikely.

The conclusions arrived at are: (1) that the changes in serum electrolyte levels in acute porphyria are not dependent on adrenal cortical deficiency but are probably due to renal damage; (2) that pantothenic acid, reported as beneficial in chemically induced porphyrinuria, is of doubtful value in acute porphyria, though further trial is advisable. I realize that conclusions drawn from the investigation of a single case may require modification with further experience.

Summary

A classical case of acute porphyria is presented. The previous finding of low serum sodium and chloride is confirmed, and it is shown that these are not due to adrenal deficiency but are probably dependent on renal damage.

The relationship between pantothenic acid and porphyria is discussed and observations during pantothenic acid therapy are described.

I am indebted to the Medical Director-General of the Navy and to Surgeon Captain J. G. Holmes, Royal Navy, for permission to publish this case, and to Surgeon Commander H. J. Bennett, Dr. G. A. Emmerson, and Dr. F. T. G. Prunty for use of their findings. I wish to thank Dr. Philip Hamill and Dr. A. J. Shillitoe for advice and criticism in the preparation of this paper, and, above all, Sick-Berth Petty Officer J. G. Scott for his valuable laboratory work.

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RETAINED PLACENTA AND POST-PARTUM HAEMORRHAGE

BY

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Though the complications during the third stage of labour and immediately after it are really the province of the obstetrician, it may perhaps be of interest to consider them from the somewhat different point of view of the pathologist. The following observations are based on a series of 98 patients with such complications who died and were studied at necropsy at Glasgow Royal Maternity Hospital. Sixty-six of these patients died as a direct result of haemorrhage and shock, nearly always within 12 hours after the delivery of the baby. The other 32 had similar haemorrhage and shock but recovered temporarily; they died later in the puerperium from other causes.

It will of course be clear that the relative frequency of the complications of the third stage in the present series of fatal cases is probably not the same as that in patients who do not die. It should also be remarked that the present data cannot be compared directly with those of Glass and Rosenthal (1948), as the cases have been classified on quite different lines.

Retained Placenta

For the present analysis the placenta has been considered as "retained" if there was delay or difficulty in its delivery, and also if severe haemorrhage occurred early in the third stage and necessitated emergency measures for the removal of the placenta. The cases have been divided into five groups according to the main factors causing the retention. These factors were determined from the necropsy findings when all or part of the placenta remained in the uterus at the time of death, and from the obstetrician's description of the details of removal when the placenta had been removed during life.

Constriction Ring (2 Cases).—In this type the placenta separates completely but is held in the uterus by a constriction ring (Fig. 1). This is only a rare cause of death. Both patients had manual removal, but died a few hours later.

Atonic Non-detachment (45 Cases).—This failure of separation of a normally attached placenta is a common cause of death. If the placenta is still in the uterus at necropsy the uterus does not appear well retracted; the upper three-quarters of the placenta is attached as it had been during the pregnancy, but its lower portion (about one-quarter) is usually separated. The placenta is not pathologically adherent anywhere, and can be peeled off quite easily from the opened uterus (Fig. 2). When the placenta has been removed before death the uterus appears quite normal at necropsy and is well retracted; it does not contain placental remains, though if the patient has lived for a few hours after the removal there is the usual small mass of clot attached to the placental site.

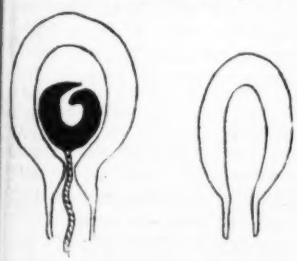

FIG. 1.—Constriction ring.

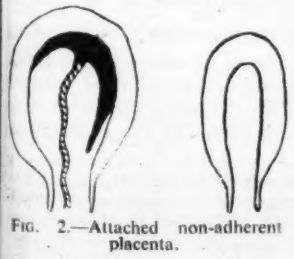

FIG. 2.—Attached non-adherent placenta.

The haemorrhage that occurs in many of these cases is well accounted for by the separation of the lower edge of the placenta. The failure of separation of the whole placenta appears to be due to uterine atony during the third stage. The present series of cases give no clear information why this atony occurred. Throughout the second stage the uterus had functioned excellently; the labours were nearly always normal, though a few were unduly short, and only two of the patients had an anaesthetic for the delivery. During the third stage there is clear evidence of atony, and it might reasonably be expected that this atony would continue subsequently. However, as soon as the placenta is delivered the uterus appears to act normally: none of the patients in the present series had haemorrhage after the placenta was removed.

A study of the general data shows that a rather high proportion of the patients were advanced multiparae and that two of them had had a retained placenta at the last delivery: the evidence from the present series is insufficient to allow of valid conclusions on the significance of these factors.

Partial Adhesion (18 Cases).—This group of cases is characterized by an abnormality of attachment of the placenta at one part of the uterus, usually in its upper half. The placenta bulges out into a bay in the uterine wall so that the myometrium is thin, sometimes only 2–3 mm. The placenta can be removed from this site at necropsy only by tearing through the attachment, leaving small tags behind. The underlying myometrium is quite tough; in the present series the wall was never perforated in the course of manual removal during life or in tearing off the placenta at necropsy. Occasionally the whole placenta is found in the uterus at necropsy, but the commoner condition is that most of the placenta has been removed, leaving a mass adhering in its bay in the uterine wall (Fig. 3). If the placenta has been completely removed during life the only remaining evidence is the area of very thin uterine wall.

Complete Adhesion (6 Cases).—This is the condition known as placenta accreta. The adhesion is similar to that in the previous group, but is almost universal instead of being limited to only one or two areas. The uterine wall is scalloped out into a series of bays, each of which may be very extensive (Fig. 4). The adhesion is sometimes so complete that no separation occurs at all and there is thus no haemorrhage. Usually the patient dies with the placenta in the uterus, or she has a hysterectomy. However, in two of the present cases the condition happened to be met with in the course of a caesarean section, and the operator removed the placenta by blunt dissection.

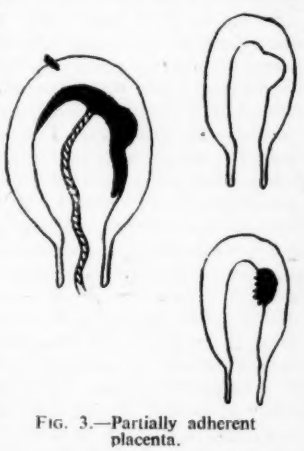

FIG. 3.—Partially adherent placenta.

The last two groups, the partial and the complete adhesions, appear pathologically to be merely different degrees of the same process. This seems to originate early in pregnancy, as it occurs in some abortions. It was associated with placenta praevia in eight of the present cases; the adhesion in these was commonly in both the upper and the lower segments. Previous retained placenta and previous puerperal

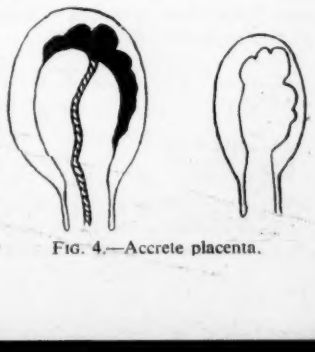

FIG. 4.—Accrete placenta.

infections do not appear to be important factors, as adhesion occurs in primiparae with the same relative frequency as in multiparae. The condition has no obvious effect on uterine function: many of the labours were short, and the average duration of the first and second stages together was 15 hours.

Intraperitoneal Rupture (2 Cases).—These were ruptures of the uterus with escape of the placenta into the peritoneal cavity so that it could not be delivered.

Factors Leading to Death from Retained Placenta

Most of the patients die within eight hours after the birth of the baby; the particular manner of death appears to be a combination of shock and haemorrhage in varying proportions. There are three factors to be considered in this connexion: blood loss, traumatic shock due to the manner of removing the placenta, and the length of the third stage of labour.

Blood Loss

Some patients have brisk haemorrhage; others have a gradual but continued blood loss which may be much greater than is appreciated. These patients may die from haemorrhage unless treated early by adequate blood transfusion. But many patients have relatively little blood loss, and death in these cases seems to be due essentially to shock.

Trauma of Interference

Every obstetrician has seen patients who collapsed shortly after forcible expression of the placenta or after manual removal. This has led to the widespread condemnation of both these procedures: it is usually maintained that manipulations such as these are of their very nature almost bound to lead to shock. On the other hand, the trauma involved cannot be compared with that which occurs in the ordinary process of delivery of the baby, and this does not cause shock. The present series of cases happens to give some information on the problem of whether these methods of removing the placenta are in themselves productive of serious shock.

In the hospital where these necropsies were performed there were three obstetric units, each of about the same size and with the same intake of patients, so that their results may fairly be compared. The chief obstetrician of one of these units held very strong views on "mismanagement of the third stage." His guiding principle was to leave the placenta to separate naturally even if this took a long time. He made strict rules in his unit that there should be no interference with the uterus. Control of the fundus was allowed, sufficient to prevent bleeding, and gentle expression was permitted when the placenta was obviously lying free in the lower segment or vagina. Apart from this, there was a clearly stated policy against expression, Credé's manœuvre, or manual removal. On the other hand, in the other two units the staff was allowed considerable freedom in attempts to get the placenta away. Expression of various types was attempted, probably in many cases with ascending grades of force, and, if this was unsuccessful, manual removal was performed. (Intravenous ergometrine had not become a recognized treatment at the time these cases occurred.) The Table shows the number of deaths in the three units.

Results of Treatment of Retained Placenta

	Interference Unit 1	Interference Unit 2	Non-interference Unit
Deaths within 12 hours:			
Placenta delivered	9	9	5
Placenta *in utero*	4	2	11
Deaths after 12 hours:			
Placenta delivered	6	12	7
Placenta *in utero*	0	0	4

The 16 early deaths in the unit where non-interference was the rule are not significantly different from the 13 and 11 early deaths in the other two units (which are termed, purely for contrast, "interference units"). The only obvious effect of the policy of non-interference was a tendency for the patients in that unit to die with the placenta still *in utero*. So far as these figures go, they suggest that, though forcible expression and manual removal may not be ideal procedures, their omission in cases of retained placenta is at any rate just as harmful to the patient as their performance. It does not appear that progress in the treatment of retained placenta will be achieved along this particular line of non-interference.

Duration of Third Stage

The most striking point in the present series of necropsies is that, with certain special exceptions which are discussed below, the third stage of labour had been allowed to continue for three hours or more. This is shown in Fig. 5, which deals only with the patients who died of haemorrhage or shock. The clear parts of the columns indicate the time of removal of the placenta; the patients lived, on the average, about two hours longer. The black parts of the columns represent patients who died with the placenta still *in utero*.

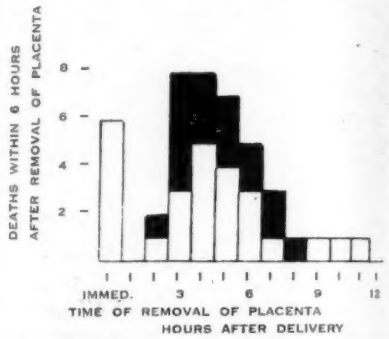

FIG. 5.—Duration of third stage of labour. Clear parts of column = time of removal of placenta; black parts = patients who died with placenta still *in utero*.

The six deaths following immediate removal of the placenta form a special group—three cases of caesarean section in which the placenta was found to be grossly adherent, and three cases of enormous haemorrhage which necessitated immediate manual removal but which was followed by rapid death, purely from blood loss. There were no deaths of patients who had the placenta removed between a half and two hours after the delivery of the baby. Most of the deaths occurred in cases in which the placenta had been left *in utero* for three to seven hours. The particular kind of treatment, whether removal of the placenta or leaving it in the uterus, did not seem to be a significant factor at this stage.

A great variety of interpretations can be placed on the significance of this prolonged third stage, but they are all speculative. The important question is whether the mortality would be reduced if the third stage was always completed in less than one hour—by oxytocic drugs or by expression or by manual removal. Unfortunately this question cannot be answered, as there does not seem to be an adequately controlled investigation of the matter.

Post-partum Haemorrhage

In the series there were 25 cases of severe haemorrhage following delivery of the placenta: 16 of these patients died within seven hours after delivery; the other nine recovered temporarily but died later in the puerperium. These fall into two groups.

Rupture of Uterus (6 Cases).—In these patients the cause of the bleeding was found at necropsy to be rupture of the uterus or significant cervical tears; the amount of the haemorrhage varied.

Atonic Post-partum Haemorrhage (19 Cases).—In these cases there was atony of the uterus and gross haemorrhage after the delivery of the placenta. At necropsy the uterus was large and poorly retracted. In every case of this group the placenta had been delivered easily, always within an hour and usually within a few minutes. However, the confinement had often been complicated: accidental haemorrhage in four cases, dystocia and forceps delivery under general anaesthesia in seven, and section under general anaesthesia in one. There were also two interesting cases in which a sudden severe haemorrhage about two hours after a normal third stage was the first warning of a post-partum eclampsia.

It is just as difficult to find a really adequate explanation for atonic post-partum haemorrhage as it is for atonic non-detachment of the placenta. It would in theory be quite reasonable for the uterus to be so "worn out" by a difficult second stage that it could not retract adequately either in the third stage or subsequently. In fact this type of atony is not common. Instead there are two different conditions: (1) The attached non-adherent placenta: the uterus has functioned well and easily in the first and second stages of labour, is atonic in the third stage of labour, but retracts excellently as soon as the placenta is out. (2) Post-partum haemorrhage: the uterus has often had difficulty in the first and second stages of labour, retracts excellently in the third stage and expels the placenta easily, but becomes atonic after the placenta is out. The present study does not help in the elucidation of this paradox.

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TYPHOID TREATED WITH CHLOROMYCETIN

BY

F. MURGATROYD, M.D., F.R.C.P., D.T.M.

Physician, Hospital for Tropical Diseases (University College Hospital); Deputy Director, Department of Clinical Tropical Medicine, London School of Hygiene and Tropical Medicine

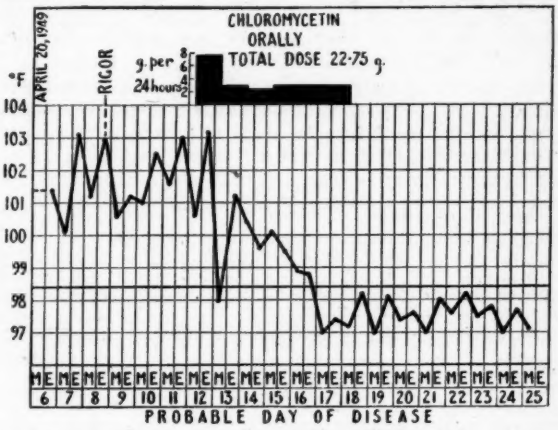
In view of the present outbreak of typhoid fever at Crowthorne (*Journal*, May 7, p. 827) it is of topical interest to submit a preliminary and admittedly incomplete and imperfect record of treatment with chloromycetin of another case of typhoid fever recently seen in the Hospital for Tropical Diseases.

Case Report

This patient, a European aged 55, arrived by air at Southampton on April 5, 1949, three days after leaving Pakistan, where he had been on a short business trip. On his homeward flight and for the next ten days he did not feel fit, but was not ill enough to consult a doctor. On April 15 he had some shivering, sweating, and generalized aching, but continued his normal activities until April 20, on which day he himself drove 200 miles by car, finally calling at the Hospital for Tropical Diseases, where he complained of feeling feverish. Examination then revealed: temperature 103° F. (39.4° C.), but no focal signs of infection; haemoglobin 90% (Haldane), erythrocytes 4,430,000 per c.mm., leucocytes 5,300 per c.mm. (neutrophils 66%, lymphocytes 31%, monocytes 3%); no malaria parasites; slight albuminuria. He was admitted to hospital.

From April 21 to 26 he had a remittent fever (101–103° F. =38.3–39.4° C.); he developed severe toxaemia, delirium, some cyanosis, a distended abdomen, and two crops of rose-coloured spots on his trunk. Relevant laboratory findings were as follows:—April 21: Blood agglutinin titre, T O negative, T H 1 in 250 (he had not been inoculated). April 22: Blood culture, *Salmonella typhi*; faeces negative. April 25: Blood agglutinin titre, T O 1 in 250, T H 1 in 1,000, T Vi 1 in 10. (The Vi agglutination was kindly done by Dr. Felix, who at the same time found somewhat higher titres for T O and T H than those quoted; the lower figures are given, however, as they form part of the comparative series obtained at 50° C., whereas Dr. Felix did not heat the serum beyond 37° C.)

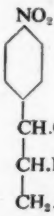
From April 26 to May 2 the patient was given chloromycetin (chloramphenicol, Parke Davis) orally. The initial dose was 4 g., and this was followed by 0.25 g. two-hourly, a total of 22.75 g. being given. During the first 24 hours of treatment his temperature fell to normal; thereafter it rose again and then subsided steadily during the next three days (see Chart). In the first 24 hours the patient's general condition



became markedly worse, and then gradually improved. Twenty-five days after the onset of the disease we now have another negative culture of faeces. On the evening of the twenty-fifth day the temperature was 97.6° F. (36.4° C.) and on the morning of the twenty-sixth day it was 98° F. (36.7° C.).

Discussion

In view of his history of indefinite but possibly prodromal symptoms during the fortnight preceding April 15 it is impossible to be sure of the exact duration of the illness before treatment, and it might be argued theoretically that the fever terminated naturally. It seems reasonable, however, to suggest that the first definite febrile manifestation was on April 15, when he had shivering, sweating, generalized aching, and malaise, and consequently that the illness was of about five or six days' duration when he was admitted to hospital. Such a duration is compatible with his initially mild toxaemia, the very slight anaemia, the white cell count, the impalpable spleen, the positive blood culture, the negative faecal culture, and the low agglutination titre found on admission to hospital; and with the appearance of the rash, the rapid development of severe toxaemia, and the rise in agglutination titre soon after admission. Alternatively, if the illness was of longer duration, then it certainly became exacerbated about the time of admission to hospital. In either event it seems unlikely that the patient would have improved without treatment as rapidly as he did after he was given chloromycetin: certainly his clinical condition just before treatment gave rise to considerable anxiety. Finally, the improvement with chloromycetin was what was anticipated from previous observations on typhoid fever treated with the drug (Woodward *et al.*, 1948).



Chloromycetin originally isolated from cultures of *Streptomyces venezuelae* has now been synthesized (Ehrlich *et al.*, 1947, 1948; *B.M.J.*, 1949). It is *l*–ψ–1 *p*-nitrophenyl–2-dichloroacetamidopropane–1:3–diol, a white crystalline substance with bitter taste. It has considerable antibiotic activity against a wide variety of patho-

genic organisms (Smadel and Jackson, 1947, 1948; Payne, Knaudt, and Palacios, 1948; Payne, Sharp, and Knaudt, 1948; Smadel, Woodward, *et al.*, 1948; Smadel, Leon, *et al.*, 1948; Pincoffs *et al.*, 1948), including the viruses of lymphogranuloma inguinale, psittacosis, and primary atypical pneumonia, the rickettsias, the enteric, Brucella, and relapsing-fever organisms, as well as a large number of others.

It is therapeutically effective after being given orally, but as it rapidly disappears from the blood frequent doses or high intermittent doses seem required; therapeutic dosage appears free from toxic or undesirable side-effects on man (Ley *et al.*, 1948).

As in the present case, positive stool cultures may occasionally be found in typhoid after a course of chloromycetin, and sometimes relapses with positive blood cultures may occur. Such relapses seem to respond readily to further courses of the drug, and no evidence that the organism becomes resistant has yet been reported.

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Medical Memoranda

A Clinical Note on a Vasovagal Attack of Gowers

Sir William Gowers (1907) described prolonged seizures the symptoms of which consisted "chiefly in disturbance of some of the functions of the hypogastric nerve," usually accompanied by more or less vasomotor upset. Of sudden onset, the symptoms, at first slight, gathered strength rapidly and then slowly receded, an attack seldom lasting less than half an hour in all. To these episodes Gowers gave the name "vagal" (or, when the vasomotor disturbance was much in evidence, "vasovagal") attacks. He added that the word "vagal" was used "only as a convenient descriptive term, bringing together symptoms which cannot be easily included in a useful designation." He believed that these attacks were to be regarded as a protracted form of minor epilepsy, "drawn out, lengthened, as it were, and thereby made less intense, though not less distressing," by the absence of any tendency to termination by loss of consciousness.

Although vasovagal attacks of Gowers's type have an established place in neurological literature they are relatively uncommon, and for this reason may at times be perplexing to those unfamiliar with the clinical picture. The following case report may therefore be of some interest, since it illustrates both the nature of the symptoms and their characteristic pattern.

CASE HISTORY

Shortly after sitting down to dinner one evening early in March, 1947, a healthy man aged 30 became aware of a vague sense of uncertainty and apprehension, which was at first not severe enough to prevent him taking his soup. It became more pronounced, and a feeling of swimminess was added. Thinking he was going to faint, he left the table and lay down on a sofa. Despite this the attack continued to grow in intensity, with mounting mental and physical distress. There was profuse sweating and audible intestinal gurgling, and he felt as though his bowels might be moved even against his will. He observed that his pulse rate had fallen to about 30 a minute (roughly half its normal resting value), the pulse being weak, and there was extreme pallor and coldness of face and hands. At the height of the attack, which occurred a quarter of an hour after its onset, angor animi was a marked feature. At this time the radial pulse was very slow and almost impalpable, and there was profound disinclination to make any movement. A curious hoarseness and weakness in phonation was also experienced, as though, it seems, he was unable to expire forcibly enough to set the vocal cords in full vibration. Parenthetically it may be remarked that no respiratory distress or, apparently, any definite alteration of respiratory rhythm was noticed by the patient at any time in his attack. A slow waning of the attack followed, the terminal stage of its decrescence being accompanied by a subjective feeling of intense cold, with unrestrainable chattering of the teeth and violent shivering, lasting fully ten minutes. The total duration of the attack was between half and three-quarters of an hour.

COMMENT

Unfortunately the patient was not seen during the attack. However, his full and careful account unquestionably established its identity with those described by Gowers: indeed, the similarity to Gowers's second case is strikingly close. Full physical examination the following day revealed no abnormal cardiovascular or neurological signs, and the blood pressure was normal (125/80). An electrocardiogram taken two days later showed a heart rate of 70, with sinus arrhythmia but otherwise normal. The patient experienced infrequent extrasystoles for about a fortnight afterwards, and then these disappeared.

It should be added that there was no personal history of similar attacks in the past, though ten years before, as a medical student on a ward round, he had once nearly fainted. The family history was essentially negative.

It is perhaps significant that the patient had returned from the Tropics only eight weeks before, to meet with the unusually severe cold of the 1946–7 winter. Further, he had had three bouts of coryza in quick succession, the last less than a week before the attack. So far as is known there have been no recurrences.

MICHAEL JEFFERSON, B.M., M.R.C.P.

REFERENCE

Gowers, W. R. (1907). *The Borderland of Epilepsy*. Churchill, London.

Death following Injection of Neostigmine

Neostigmine ("prostigmin") is known to slow the pulse markedly even in the fit patient, and in view of the widespread use of this drug in present-day anaesthetics its effect on a gravely ill patient, as exemplified in the following case, must be seriously considered.

CASE REPORT

A well-built but gravely ill man, aged 38, was admitted with a history of abdominal pain for three or four days. His abdomen was distended, and there was bronchial breathing, with rales at both lung bases. His pulse was 140 and respirations 50 per minute. A careful and experienced house anaesthetist induced anaesthesia with thiopentone 0.35 gr. (23 mg.), and continued with cyclopropane. Despite the patient's poor general condition, tubocurarine, 15, 10, and 5 mg., had to be given to obtain satisfactory relaxation throughout an operation which lasted 75 minutes. Four pints (2.27 litres) of purulent fluid was evacuated through an upper abdominal incision. The stomach was found to be normal, but a perforated gangrenous appendix was revealed, making a second incision necessary. After the peritoneum was sewn up the general condition was no worse than at the beginning of the operation and certainly not immediately alarming. The pulse rate was 100, but because of the curare the tidal exchange was not adequate and respiration had to be "assisted." At this stage 2.5 mg. of neostigmine, together with 1/100 gr. (0.65 mg.) of atropine, was injected through the tubing of the intravenous drip. After one or two minutes, instead of the expected respiratory response, slight cyanosis was noticed, and the pulse, which before the injection was reasonably good, was no longer perceptible. Adrenaline 0.5 ml., injected into the tubing, and cardiac massage were ineffective.

Post-mortem examination revealed collapse of the lower lobes of both lungs, dilatation of the right side of the heart, and generalized peritonitis of a very severe degree. It is improbable that the man would have survived the operation long in any case, but it is not possible to dissociate the unexpectedly sudden death with the intravenous injection given two minutes before.

R. R. MACINTOSH, D.M., D.A.

Reviews

MYOTONIA

Myotonia. Thomsen's Disease (Myotonia Congenita), Paramyotonia, and Dystrophia Myotonica. A Clinical and Heredobiologic Investigation. By Eivind Thomasen. Translated from the Dutch by Finn Brink Carlsen. (Pp. 251; 17 figures. £1.) Denmark: Universitetsforlaget i Aarhus. London: H. K. Lewis and Co. 1948.

Myotonia is defined as a peculiar functional disturbance of striated musculature characterized by an abnormal protracted muscle contraction. It is accompanied by a typical electrical phenomenon whereby muscular contraction continues for several seconds and then subsides gradually. Myotonia is a characteristic manifestation of the hereditary disorders myotonia congenita (Thomsen's disease), paramyotonia (Eulenburg's disease), and dystrophia myotonica (myotonia atrophica). These disorders, though admittedly rare, are among the most interesting of neurological affections. Dr. Thomasen's monograph is a valuable contribution to the literature of this subject, for it affords the English-speaking reader a detailed account of the clinical manifestations. The author was fortunate in the richness of his personal experience of these affections. Thus, his cases of dystrophia myotonica are drawn from 21 Danish families with 874 living members, among whom there were 101 assured cases of the disease. In the case of Thomsen's disease the author surveyed five families, comprising 465 living members, of whom 29 were afflicted with the disorder. Dr. Thomasen also draws attention to the syndromes described by Hoffmann and by Debré and Semelaigne in which muscle hypertrophy and myotonoid features are associated with myxoedema. The author is particularly interesting when discussing Maas and Paterson's views on the identity of Thomsen's disease and dystrophia myotonica. He discusses the arguments in some detail, but comes to the conclusion that the two disorders are distinct affections.

MACDONALD CRITCHLEY.

PRACTICAL OBSTETRICS

A Manual of Practical Obstetrics. By O'Donel Browne, M.D., M.A.O., M.A., Litt.D., F.R.C.P.I., F.R.C.O.G. 2nd edition. 1948. (Pp. 267; illustrated. 35s.) Bristol: John Wright and Sons, Ltd.

In this book Professor O'Donel Browne has set himself an extremely difficult task in attempting to cover the management and treatment of all obstetrical conditions, normal and abnormal, within the limit of 250 pages. Even when theoretical considerations are omitted as far as possible, the field is large and much of it must of necessity receive a thin and unsatisfactory covering. In a work of this size it is perhaps a better policy to deal adequately with a few common obstetrical problems. This book has, of course, many good features, and among these may be mentioned the clear and well-illustrated accounts of the technical details of obstetric manœuvres. In many respects, however, it invites adverse comment, despite criticism being forestalled to some extent by the author's pointing out that the book presents unqualified personal opinions and that it should be read in conjunction with the more standard textbooks rather than in place of them if the reader is to obtain a proper perspective.

Twelve years have elapsed since the first edition was published, and this period has seen great changes in outlook and practice in midwifery. To bring the book thoroughly up to date would therefore have necessitated rewriting it almost completely. As it is, it gives the impression that the revision has been patchy, and the effect is a rather curious mixture of ancient and modern. To take two examples only: penicillin is used for puerperal sepsis but not for acute mastitis; the modern classification of pelvic shapes is included, but the treatment of thrombophlebitis is the same as practised twenty years ago, and there is no mention of anticoagulant drugs. The absence of any attempt to indicate the relative importance of different conditions is also noticeable.

It may be that the author has often deliberately described treatment which is not ideal, having in mind those of his readers who will be called to practise under circumstances far from perfect in some of the remoter parts of Eire. Indeed, the book is primarily intended for Professor O'Donel Browne's own students and to supplement his personal instruction to them. It may serve this purpose well, but the general reader will find it less helpful.

T. N. A. JEFFCOATE.

ECLAMPSIA

Eclampsie et Eclampsisme. By Henri Vignes. (Pp. 220. 450 francs.) Paris: Masson et Cie. 1948.

By this new publication Henri Vignes has increased his already great reputation. He has compressed into some 200 pages most of what has been written or recorded about eclampsia. Indeed, one cannot recall any comparable work on the subject, and it is hoped that it will be translated into English. The book is a typical French publication, with little effort to produce a table of contents and with none of the precise classification usually provided by German writers. Its success depends essentially upon clarity of expression and the wide knowledge of the author. References are ingeniously incorporated in the text, with references to the important papers placed at the bottom of each page. No publication of importance seems to have escaped notice, and proper stress is placed upon work done in Great Britain, though (on page 70) F. J. Browne is referred to as "Browe." The author stresses no particular theories and no particular therapies. His attitude is one of an impartial judicious summing-up. The volume merits the highest praise.

WILFRED SHAW.

VITAMIN DEFICIENCY SYNDROME

A Neuro-Vascular Syndrome Related to Vitamin Deficiency. By Hendrik Smitskamp. (Pp. 114. No price given.) Amsterdam: Scheltema and Holkema's Boekhandel.

During the recent war a group of Dutch medical men made a study of the malnutritional syndromes which were met with among the inmates of a Japanese P.O.W. camp at Bandoeng, Java. This group included Dr. O. L. E. De Raadt, otoneurologist, Dr. J. Schwartz, ophthalmologist, the late Dr. Buitelaar, neurologist, who did not survive the hardships of war, Dr. Van der Hoeven, neurologist, and Dr. H. Smitskamp, general physician. One section of their observations has already been published and reviewed—an M.D. thesis (Leiden, 1947) entitled "Pellagra in the Oto-neurology and Rhino-laryngology," by De Raadt. This book is also an M.D. thesis, and the author discusses the condition commonly known as "burning feet."

In Part 1 successive chapters are on the clinical manifestations, the results obtained by means of capillaroscopy, laboratory findings, and therapy; in Part 2 on history, current literature, aetiology, pathogenesis, the differential diagnosis from erythromelalgia, acrodynia, and acroparaesthesia. In 1943 some 700 patients were seen at a clinic set up for malnutritional disease; from these 347 were selected and formed the subject for study. The observations made by Dr. Smitskamp do not differ materially from those made by our own medical men in other P.O.W. camps in the Far East, but they form a very interesting and detailed complementary contribution to the subject. He noted that optic neuropathy occurred in 42.8% of the cases of "burning feet," and in 27.8% of those with "otoneurological aberration." "Epithelial lesions" (cheilosis, scrotal dermatitis) were very common, but occurred also among those not suffering from the syndrome—31% and 25% respectively. He remarks on the close association of the syndrome with signs of hypovitaminosis to the exclusion of beriberi and pellagra.

This paper will interest those who are familiar with the literature of the deficiency syndromes.

HUGH S. STANNUS.

A POPULAR SIGNPOST

Anaesthetics and the Patient. By Gordon Ostlere, M.A., M.B., B.Chir., D.A. Sigma Introduction to Science 15. (Pp. 166. 7s. 6d.) London: Sigma Books. 1949.

This is one of the "Introductions to Science" series, and fills a real need in being addressed to that large section of the intelligent lay public which is repelled by the sentimentality

and inaccuracies of most of the "popular" works on anaesthesia but cannot follow the highly technical style of scientific textbooks. Dr. Ostlere sets out in lucid and sober fashion the present position of anaesthesia and should reassure many a nervous patient about to undergo an operation. The author has considered his public to be of the average intellectual status of a preclinical medical student, and he has succeeded admirably in presenting his subject accurately without the use of technical terms—a task which must have been difficult. All the latest advances of proved worth have been included, and the book should do much to impress upon the public the importance of being looked after by a highly trained specialist anaesthetist. The type is clear, and four plates on glossy paper are included in the middle of the book.

C. LANGTON HEWER.

PRE- AND POST-OPERATIVE CARE

Preoperative and Postoperative Care of Surgical Patients. By Hugh C. Ilgenfritz, A.B., M.D., F.A.C.S. Foreword by Urban Maes, M.D., D.Sc., F.A.C.S. (Pp. 898; 110 illustrations. $10 or £2 12s. 6d.) St. Louis: The C. V. Mosby Company. London: Henry Kimpton. 1948.

During the last twenty-five years the risk in undergoing a major surgical operation has been much reduced, an improvement due in large part to the preliminary study of the patient and his preparation and aftercare. This book deals with these subjects, and is divided into two parts. The first thirteen chapters describe matters from a general standpoint, and the later sections give information about the management of disease in various parts of the body. This makes the book convenient for reference on any particular occasion, but increases its size and leads to a certain amount of repetition. Having said this, one can only praise the manner in which the subject has been presented. The physiological basis for each particularly recommended procedure is clearly explained, which makes the book readable and acceptable. And should the reader need more detailed information there is a good list of references at the end of each chapter. Every house-surgeon will want this book. It is of little use to him in a reference library. But it is expensive

C. A. PANNETT.

MEDICAL ANNUAL, 1948

The Medical Annual. A Yearbook of Treatment and Practitioner's Index. 1948. Editors, Sir Henry Tidy, K.B.E., M.A., M.D., F.R.C.P., and A. Rendle Short, M.D., B.S., B.Sc., F.R.C.S. (Pp. 368; 117 illustrations. £1 5s.; subscription price £1 2s. 6d.) Bristol: John Wright and Sons. 1948.

In its sixty-sixth year the *Medical Annual* maintains the high standard it has long established, and the reviewer's task in selecting particular contributions for comment is not facilitated by the general excellence of the work. Professor Tytler's authoritative review of B.C.G. will be read with interest by all whose work brings them in contact with tuberculosis. Dr. MacKenna's article on the treatment of cutaneous tuberculosis with vitamin D_2, and Mr. Barrett's on the surgery of the heart and great vessels, are both topical and instructive. Professor Crew's report on social medicine reflects the growing appreciation of the importance of this branch of practice. The book closes with the customary indices of pharmaceutical preparations marketed, and of British and American books published, during the year. The book production is of the high order expected from John Wright, and the half-tone and colour plates deserve particular commendation.

The *Medical Annual* for 1948, as usual, faithfully mirrors the advances in medicine and surgery for the year.

R. BODLEY SCOTT.

The number of books on chiropody—until recently a rather neglected literary field—grows apace. The *Textbook of Chiropody*, by Mrs. Swanson (E. and S. Livingstone: 20s.), represents the teaching of the Edinburgh School of Chiropody. The book covers the subject adequately if briefly within its 200 pages, an outstanding feature being the excellence of the illustrations; the use of a high-grade paper has allowed of almost perfect reproduction of the many photographs and skiagraphs. The production is up to the usual high standard set by Messrs. Livingstone.

BOOKS RECEIVED

[*Review is not precluded by notice here of books recently received*]

Les Plaies du Cerveau. By J.-E. Paillas and J. Bonnal. (Pp 363. 1,100 francs.) Paris: Flammarion. 1948.

From the Faculty of Medicine of Marseilles.

Clearance Tests in Renal Disorders and Hypertension. By O. Hogeman. (Pp. 264. No price.) Uppsala: Appelbergs. 1948.

English translation of a work originally appearing in *Acta Medica Scandinavica.*

Fortschritte der Tuberkuloseforschung und Behandlung. By H. Birkhauser. Vol. 2. (Pp. 446. 27 Swiss francs.) Basle: S. Karger. 1948.

Aspects of tuberculosis, by Swiss authors.

Renewal Pages for the Nelson Loose Leaf Medicine. Vols. 1 and 2.

Letters to Margaret. By T. Faithfull, M.R.C.V.S., Ps.F. (Pp 108. 8s. 6d.) London: Rylee. 1948.

Psychological enlightenment for juveniles.

A Handbook of Self Analysis. By T. Faithfull, M.R.C.V.S., Ps.F. (Pp. 116. 8s. 6d.) London: Rylee. 1948.

For the layman.

Religion and Psychotherapy. By A. G. Ikin, M.A., M.Sc., Ps.F. (Pp. 112. 8s. 6d.) London: Rylee. 1948.

Reprint of the book first published in 1935

The Value of Neurosis. By C. W. Wall, Ps.F. (Pp. 116. 8s. 6d.) London: Rylee. 1948.

Mainly for the layman.

Hadden's Health and Welfare Services Handbook. By J. Moss, C.B.E. (Pp. 376. 25s.) London: Hadden Best. 1948.

A guide to the law relating to the health and welfare services

The Anatomy of Semnopithecus Entellus. By A. A. Ayer, B.A., M.B., B.S., M.Sc. (Pp. 182. 20 rupees.) Madras: Indian Publishing House. 1948.

A study in comparative anatomy.

Aids to Psychology. By J. H. Ewen, F.R.C.P.Ed., D.P.M. 3rd ed. (Pp. 192. 5s.) London: Baillière, Tindall and Cox. 1948.

From the familiar series.

Modern Child Psychology. By A. H. Bowley, B.A., Ph.D. (Pp. 159. 7s. 6d.) London: Hutchinson's University Library. 1949.

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PREVENTION OF SEA-SICKNESS

A dramatic account of a large-scale experiment on sea-sickness has just been published by Drs. Gay and Carliner,[1] of Baltimore. The American soldiers who cross the Atlantic in army transports often suffer from the rough seas. The conditions, according to the authors, are very different from those on ordinary passenger vessels, in which sufferers remain in their cabins and receive attention from stewards and nurses. In the troopship *General Ballou* (13,000 tons), 12 hours out of new York on Nov. 27, 1948, "the corridors of compartments were congested by sick men so ill that they were unable to reach the latrines. The men who reached these areas were unable to return to their compartments and remained stretched out in a semiconscious condition on the floors until more seaworthy individuals managed to drag them to the sick bay or back to their hammocks. The latrines became temporarily indescribably repulsive. . . . On the previous trip of the *General Ballou* from Bremerhaven more than 100 intravenous injections of saline solution were required to relieve a number of dehydrated persons."

During the voyage which began on Nov. 27 a series of tests were carried out with a drug known as "dramamine"—a compound of theophylline (with chlorine substituted for one hydrogen) with the substance well known as the antihistamine agent "benadryl." As soon as the ship left harbour a group of 134 men in one compartment of the ship were given 100 mg. of the drug four times a day for two days; none of these developed nausea and vomiting in this time. They were then left without treatment for 18 hours, and 41 by that time became sick. Dramamine was given again, and 40 regained their normal well-being within one hour of the first dose. These men were compared with a group of 123 men in another compartment who were given a placebo. Of these, 35 were sea-sick within 12 hours of leaving harbour. At the end of two days the sick men were given dramamine and obtained complete relief within one hour of the first dose.

In addition to this experiment in prophylaxis another experiment was carried out in which men were treated after they became sick; they were in a third compartment of the ship. Out of 129 men 15 became sick after 12 hours at sea. These were given 100-mg. doses of dramamine every five hours, and all but one were completely relieved. The one was partially relieved. In a fourth compartment containing 99 men 33 reported sick in 12 hours. They were given a placebo, which cured 19 whose complaints had been merely of nausea and dizziness. The placebo, however, did not relieve the remaining 14, who became steadily worse until they were given dramamine, when all were cured. Further evidence of the curative value was obtained by treating 195 men who became sick out of 881 in other compartments. Of these there were only eight who were not relieved by taking 100 mg. of the drug every five hours. The 187 men who were relieved were treated for two days, after which administration of the drug ceased; 44 of them then became sick again within 12 hours.

These experiments justify the conclusion that dramamine is a non-toxic drug which can be used to control sea-sickness. It is interesting to observe that it can be taken by mouth or be given per rectum. This route was used successfully in men brought to the sick bay in a semi-conscious state. The capsule was punctured at each end, inserted in the rectum, and 30 ml. of saline was injected. Some of the conditions of the experiment with dramamine interfered with the fairness of the test. Thus in the first test described every man in one compartment was given dramamine and every man in another compartment was given the placebo. It would clearly have been better to give the drug and the placebo to men in the same compartment. Some men are sick when they see others sick, and not before. The arrangement adopted therefore favoured dramamine.

During the late war much experience was gained in this country in the testing of remedies for sea-sickness, and a modest report of that work was published by Holling, McArdle, and Trotter[2] in 1944. They made no statement more definite than that, of a number of drugs examined, hyoscine "appears to be the most generally useful." The principal question which therefore arises is whether the new substance dramamine is a better remedy than hyoscine. The war experience made it clear that reports of the excellence of any one drug when not compared with another were untrustworthy. Some observers were convinced from their experience that amphetamine was of great value for sea-sickness. When compared directly with hyoscine, Holling, McArdle, and Trotter found it to be of no value at all. A comparison is valid only when the two drugs are used at the same time in the same ship, each being given to a sufficiently large group of men. It is therefore impossible to say whether dramamine is superior to hyoscine or not, for experience since the war in sea and air transportation has fully confirmed the value of hyoscine, of which proprietary preparations are on the market.

Gay and Carliner refer to the work of Holling and his colleagues on hyoscine and say that "the side effects from hyoscine were such that they did not recommend repeated doses." There is no statement of this kind to be found in the paper, and the only reaction which was observed was dryness of the mouth, though a careful watch for side effects was kept. The usual dose of hyoscine was 0.6 mg. (of hyoscine hydrobromide), but even after 1.2 mg. it "had no obvious effect on physical performance, ability to shoot, or on near vision." Although dramamine was not found to cause any reactions it seems unlikely that a substance so closely related to benadryl taken in doses of 100 mg. every five hours will be found as free from unpleasant effects as hyoscine.

[1] *Bull. Johns Hopk. Hosp.*, 1949, May.
[2] *Lancet*, 1944, **248**, 127.

WHITTLING DOWN

The difficulty already experienced of getting acutely ill patients into hospital will be increased by the 10% reduction in hospital costs recently imposed by the Minister of Health. For example, the cut in the budget of St. Bartholomew's Hospital is as much as £300,000. The original gross estimate for the budget of the United Manchester Hospitals was £1,224,720 ; with allowance for the Spens recommendations and domestic wage increases the total bill comes to £1,292,904. This group of hospitals has now been ordered to impose a cut of about £200,000. As some 60% of the total gross estimates is accounted for by wages, all of which are laid down by law, it follows that a heavy cut has to be made in the rest of the hospital budget. It is worth observing that according to Dr. R. D. Vanderwarker,[1] Director of the Passavant Memorial Hospital in Chicago, the payroll in U.S.A. hospitals is estimated to account for 60% of total hospital costs. Speaking before a section of the American College of Surgeons Dr. Vanderwarker also predicted that hospital costs would continue to rise. It is of interest to note that for the United Manchester Hospitals the medical salaries amount to £182,000, nurses' salaries to £183,000, and all other salaries to £349,000, making a total of £714,000. To illustrate the position in different parts of the country we give details of the 1949–50 budget for some of the provincial teaching hospitals. Oxford, for example, suffers a cut of £170,000 on an estimated expenditure for maintenance of £960,000 ; Bristol a cut of £120,000 out of an estimate of £970,000 ; Birmingham a cut of £87,708 out of an estimate of £1,308,329. Leeds and Liverpool on the other hand are incurring no cut in their estimate for maintenance, but on capital expenditure the former is to undergo a cut of £2,000 out of £52,000, and the latter £180,000 out of £300,000. The Provincial Group of the Association of Teaching Hospitals is requesting the Ministry of Health to give it information about the basis on which the cuts have been made, ranging from nothing up to 25%. A Ministry of Health official is reported as saying[2] that even with the £9,500,000 cut the hospitals are getting more than they did last year. In 1948–9, it is stated, they received £172,796,000, and for 1949–50 they will be receiving £177,531,000.

The arbitrary fashion in which these cuts have been made suggests that hospital finance has got out of hand and the Minister of Health has temporarily lost command of the situation. There is much to be said for the suggestion made by Sir Frederick Menzies that a survey of hospital costs should be made by such bodies as the King Edward's Hospital Fund for London and the Nuffield Provincial Hospitals Trust, organizations with great experience in this field. There has, of course, been an increase in the cost of hospital administration. It may be asked whether at a time when hospital building is almost out of the question it is necessary to have architects appointed to Regional Hospital Boards ; they receive salaries appropriate to architects but their function in fact seems to be that of clerks of works. The expense of out-patients' dispensing is heavy, in one group of hospitals amounting to £30,000 a year for patients who should be treated by their general practitioners. In an important eye hospital in London the annual bill for providing spectacles is £63,000, although the dispensing is done more economically than in the Supplementary Ophthalmic Service. It is difficult to see how this hospital can cut its expenditure without curtailing the work in the out-patients' department and closing some wards. In fact, real economy would be effected if it was possible for its work to increase.

The most serious outcome of all this is the threatened closure of hospital beds. The Manchester Regional Hospital Board, for instance, has decided that if the cuts in capital and maintenance estimates are put into effect there will be 2,019 fewer hospital beds available for the already long waiting-list of patients. St. Bartholomew's Hospital had planned to reopen 330 beds, but the heavy cut in its budget now makes it necessary to keep this block closed. According to reports in the Press, Regional Boards fear that some hospitals will also have to be closed. If blocks of wards were to be shut down the cost per occupied bed in the wards remaining open would increase and hospital economy would be in a still more parlous state. All this comes at a time when it has been estimated that nearly 60,000 hospital beds in the country are out of use principally because of the shortage of nurses.

The Minister of Health has said that the reduced expenditure must be met with the least possible detriment to the welfare of patients. But at first glance it is difficult to see how the hospitals in this country can save nearly £10,000,000 without curtailing the services they provide for the public. The present situation should give the country some measure of the monetary value of the voluntary unpaid services rendered by hospital staffs to the community before July 5, 1948. If the Treasury and the Ministry of Health now find themselves unable to meet the bill Mr. Bevan may find it necessary to start once more hospital flag-days. The whole matter calls for urgent examination by those with long experience in hospital administration ; it is deplorable that the National Health Service should suffer such a severe setback within a year of its inception.

[1] *Science Newsletter*, April 16, 1949, p. 254.
[2] *Daily Telegraph*, April 28, 1949.

OCCUPATIONAL DISEASES

It is over forty years since the principle of compensation for industrial diseases was first accepted in this country, when, with the passage in 1906 of the Workmen's Compensation Act, six diseases were listed as entitling a workman to compensation. A new step forward was made by the introduction last year of the National Insurance (Industrial Injuries) Act, 1946. This Act introduces a new principle of workmen's compensation, for it establishes a system of insurance with contributions from both employer and employee to a central fund ; the workman no longer seeks compensation for his injury from his employer but claims special insurance benefit from the State.

[1] *Report of the Departmental Committee on Industrial Diseases*, 1948. London: H.M.S.O.

In March, 1947, the Minister of National Insurance set up a Departmental Committee[1] under the chairmanship of Judge E. T. Dale to review the policy of scheduling diseases under the old Workmen's Compensation Act and to give advice on the principles which should govern selection of diseases under the National Insurance (Industrial Injuries) Act. The report of this Committee has recently appeared and contains much of medical interest. Evidence was given by numerous bodies, including the Royal College of Physicians, the British Medical Association, and the Royal College of Nursing. The Committee rejected as outside its terms of reference the suggestion that benefit should be paid under this Act for every disease that can be shown to be due to employment (a scheme known as "blanket cover"). The report points out that the Committee was concerned with the selection of diseases, and that therefore the inclusion of all diseases was not contemplated. The Committee then considered the three tests recommended by the Samuel Committee of 1906, which have guided those charged with the addition of new diseases to the schedule since the 1906 Act became law, and it decided that these tests were no longer appropriate. In the new Act the word "disease" is defined as "any departure from health capable of identification by its signs and symptoms." This wide interpretation should make it no longer necessary to label as accidents conditions (for example, ill effects due to the use of vibratory tools) which medically are regarded as diseases, a practice which leads to confusion.

The Committee rightly welcomes the use of the term "occupational disease" to replace the older term "industrial disease," with its narrower application, and lays down the criterion for judging a disease to be a risk of the occupation. Here again the move to widen the interpretation of the Act is seen; the Committee recommends that a disease be considered for inclusion in the list of "prescribed" diseases if the occupation entails special exposure to risk, such risk being inherent in the conditions under which the occupation is carried out—subject always to the proviso that individual cases of the disease can be attributed to the occupation with reasonable certainty. Incidence of disease alone is not to be regarded as confirming the relationship of a disease to an occupation, for it is recognized that incidence in a potentially dangerous occupation may be within normal limits because special precautions have been taken to control the risk. The report makes only passing reference to the difficult question of "aggravation," but it was agreed that the Minister was not precluded from taking it into account.

The report gives the impression that a rigid interpretation of the terms of reference might have been used to exclude consideration of the two highly controversial issues "blanket cover" and aggravation. The Committee does not, however, interpret these terms of reference with the same rigidity in other directions; this adds to the value of the report, for a useful expression of opinion on "time limits" is given, and the recommendation made that a workman whose employment in the relevant occupation ceased at a date outside a specified period should not be automatically excluded from benefit. The old rule often entailed great hardship and injustice (for example, to patients with malignant occupational disease with a long latent period). The Committee also suggests that the time limits within which it may be presumed that a worker has developed a prescribed disease should have "closer relation to the nature of the particular disease."

The report concludes by recommending that the Minister should set up a specialized standing committee to consider the advisability of adding to the prescribed list diseases specifically referred to it, to keep under review the schedule of prescribed diseases, and to make suggestions about subjects for research. It is gratifying to find this emphasis being placed on the duty of the Minister to help forward research. Most industrial disease is preventable, and, while everything must be done to care for those who suffer from these conditions, such work can only be regarded as palliative—prevention must be the constant aim, and this should not be hindered by shortage of men or of money.

TOO SOLID FLESH

It is perhaps not surprising that in the U.S.A. interest in obesity as a medical problem is more acute than in this country. Even before the days of rationing American achievement had outstripped British, for Daniel Lambert, of Leicester, who died in 1809 at a weight of 52 st. 11 lb. (336 kg.), has long since yielded the palm to Miles Darden, of Tennessee, who weighed 72 st. 13 lb. (463 kg.). For all this, obesity remains to every physician a problem of more than academic interest: its aesthetic disadvantages need no elaboration, but its influence on longevity and on the degenerative diseases are perhaps less well appreciated. American insurance statistics[1] show that the increase in the observed over the expected death rate appears to be closely related to the degree of obesity, particularly above the age of 45 years. A man 90 lb. (41 kg.) overweight is twice as likely to die in the next year as one of normal weight. In addition to arthritis and other disorders of an overtaxed locomotor system, obesity predisposes to diabetes mellitus,[2] hypertension, arterial degeneration,[3] pulmonary emphysema,[4] and cirrhosis of the liver.[5] Its control is therefore an essential part of the prevention of these important and common disorders.

Reduced to the simplest terms, obesity can be regarded as the consequence of the body's energy intake exceeding its energy output. When opportunity is unrestricted, energy intake is a function of appetite, and obesity will result when appetite is not geared to the body's metabolic needs. This is true of all forms of obesity, and von Noorden's division into exogenous and endogenous varieties must be discarded. This statement, however, like most simplifications, obscures the intricacies of the problem. The obese do not absorb or utilize nutriments more completely than the normal; their mechanical efficiency is less rather than greater. The only variables are calorie consumption, which ordinarily depends on appetite, and calorie expenditure. The second may be affected by the activity of the endocrine organs, but in most obese patients it is in no way abnormal. Appetite must be accepted as the determinant.

1 Brooks, C., *Med. J. Aust.*, 1948, **1**, 327.
2 Joslin, E. P., Dublin, L. I., and Marks, H. H., *Amer. J. med. Sci.*, 1935, **189**, 163.
3 Levy, R. L., White, P. D., Stroud, W. D., and Hillman, C. C., *J. Amer. med. Ass.*, 1946, **131**, 951.
4 Kerr, W. J., and Lagen, J. B., *Ann. intern. Med.*, 1936, **10**, 569.
5 Dublin, L. I., *Hum. Biol.*, 1930, **2**, 159.
6 *Med. J. Aust.*, 1947, **2**, 649.
7 *J. Hered.*, 1927, **18**, 153.
8 *Amer. J. digest. Dis.*, 1947, **14**, 397.
9 Freed, S. C., *J. Amer. med. Ass.*, 1947, **133**, 369.
10 *Psychosom. Med.*, 1940, **2**, 141.
11 Ludwig, A. O., *New Engl. J. Med.*, 1948, **238**, 175.

Nevertheless, it is a matter of common observation that the liability to obesity may be familial, and is often combined with a tendency to deposit fat after a definite pattern. The forms taken by this regional lipophilia may be determined by the endocrine organs, and Graham,[6] in robust Australian idiom which spurns the spurious refinement of terms derived from the Greek, recognizes the "super-droopers, the spare tires, the big pants, and the grand piano legs." Danforth's[7] account of a strain of yellow mice in which obesity is inherited as a Mendelian dominant confirms the clinical view that heredity is important.

If a constitutional, and often inherited, predisposition is admitted, appetite must still outpace metabolic needs to provide the material. It has been urged that familial liability is no more than a habit of overeating acquired from parental example. Bauer[8] is unable to accept this view, and holds that there is a constitutional abnormality of adipose tissue throughout the body—a generalized lipophilia—of which voracity is the expression. Hypothalamic lesions, the result of disease or injury in man or experimentally inflicted in animals, are often followed by obesity. Here again increased appetite is mainly responsible, though reduction of basal metabolism and of physical activity plays a minor part.

In conformity with the trend of medical thought, the excessive appetite of many obese persons has been regarded as psychogenic. Neurotic traits are said to be common,[9] and Bruch[10] claims that the mothers of fat children are emotionally starved women who overfeed their offspring to compensate for a repressed feeling of hostility. Others see overeating as a form of addiction, the more insidious and dangerous as it carries no social stigma. Eating, they claim, can assuage a sense of loss, depression, or deprivation,[11] and the frustrated victim finds peace in directing his aggressive propensities against the good things of the table.

Whatever view is taken of the cause of the excessive appetite which results in obesity, there is no debate about the basis of treatment. Restriction of calorie intake alone will reduce weight. The too, too solid flesh will melt only when its possessor submits to an unbending discipline and exerts a rigid control over his appetite. There is no easy way.

TREATMENT OF PYOCOCCAL DERMATOSES

Some of the most troublesome and depressing dermatoses to practitioner and patient are the chronic follicular and flexural seborrhoeic infections, such as sycosis barbae, external otitis, and retroauricular, axillary, and inguinal dermatitis. Any treatment holding out hope of success in these conditions is welcome and must be investigated. Chemotherapeutic and antibiotic remedies have proved disappointing, even when laboratory tests have shown the infecting organisms not to be resistant. There is also a risk of aggravation resulting from specific epidermal sensitization to the drugs employed. The halogen-substituted quinolines, as "quinolor" ointment, have been used for several years with some success in the treatment of sycosis barbae. Recently American dermatologists have reported favourably on "vioform," a related quinoline derivative containing iodine and chlorine (5-chloro-7-iodo-8-hydroxyquinoline). This substance has for long been used internally in the treatment of amoebiasis, and on the Continent it is prescribed as an antiseptic powder and paste for septic infections. Elsewhere in this issue Dr. I. Martin-Scott (p. 837) and Dr. J. Overton (p. 840) report promising results with an ointment or cream containing 3% vioform in the treatment of sycosis barbae and allied seborrhoeic infections. The response appears not to be due to the iodine as such, for vioform can be applied to the skin of patients sensitive to iodine. The number of cases reported on is small, and the period of observation is too short to form any final conclusions, but in most of the patients the improvement was rapid. A few failed to make progress, and in some relapses occurred while under treatment, but the general response was clearly superior to that obtained from most other forms of local therapy. Application of vioform only rarely caused aggravation of symptoms or irritation: in general the treatment appears to have a soothing effect, which is desirable in treating sycosis or flexural dermatitis.

It is unlikely that the promise of these early trials will be maintained. Sycosis barbae, like most constitutional ills, has its fluctuations and is apt to improve temporarily with any new form of treatment. A psychogenic, endocrine, nutritional, or toxic influence plays a major part in the aetiology of most of these dermatoses, and the surface infection is secondary. The cure is not likely to be found among the local antiseptics, but any measure of relief is a comfort to those afflicted with such ills.

MORTON'S METATARSALGIA

In 1876 T. G. Morton[1] described a severe type of metatarsalgia in which the pain was felt in the region of the fourth metatarso-phalangeal joint. In 1940 the late L. O. Betts,[2] of Adelaide, reported nineteen cases of metatarsalgia in which he had exposed the plantar digital nerve to the cleft between the third and fourth toes: in each case he found and resected a fibrous swelling of the nerve proximal to its point of division. In 1898 Robert Jones and A. H. Tubby[3] advocated resection of the fourth metatarsal head for this condition; they feared that nerve resection would leave a painful scar and disliked making an incision through the sole of the foot. In a recent review of this condition Nissen[4] records that in 1935 the late Sir Harold Stiles, who suffered from severe metatarsalgia, had the nerves to the interdigital cleft between his third and fourth toes explored by Mr. N. H. Dott, who found fibrosis of the epineurium of the branch from the medial plantar nerve: resection gave complete relief. Of the twenty-seven cases investigated by Nissen twenty-one were women and six were men. The ages of the patients varied between 23 and 55. The pain was severe and confined to the third and fourth toes and that part of the sole distal to the necks of the third and fourth metatarsals. The most constant physical sign was pain on upward and backward pressure at the base of the third and fourth toes. Nissen treated these cases by resecting the plantar digital nerve as it approaches the interdigital cleft between the third and fourth toes—a short vertical incision being made through the sole directly over the nerve. Histological findings proved that the lesion was ischaemic in nature. The digital artery may degenerate to no more than a fibrous strand. Thickening of the epineurium accounts for the bulk of the swelling. Local resection gives complete relief from pain, and the plantar scar is not a source of trouble. Similar findings have been reported by McElvenny[5] and by Winkler and his colleagues,[6] who regard the lesion as traumatic. Nissen's investigations, however, show that the lesion is caused by local ischaemia. He prefers the name "plantar digital neuritis"; the condition, however, is undoubtedly that described by Morton over eighty years ago.

[1] *Amer. J. med. Sci.*, 1876, **71**, 37.
[2] *Med. J. Aust.*, 1940, **1**, 514.
[3] *Ann. Surg.*, 1898, **28**, 297.
[4] *J. Bone Jt Surg.*, 1948, **30B**, 84.
[5] Ibid., 1943, **25**, 675.
[6] Ibid., 1948, **30A**, 496.

POSTURE AND THE CIRCULATION

Postural hypotension is an expression of an imperfect adjustment of the circulation to bipedal existence. The two conditions in which a falling blood pressure on standing is the predominant sign are fainting and the much rarer orthostatic hypotensions associated with chronic neurological and endocrine disease. In the second group there is a state of long-standing apparent sympathetic paresis. Stead and Ebert[1] concluded that there was an abnormal response to the normal pooling of blood, and that as vasoconstriction failed the blood pressure fell. In the case described by East and Brigden[2] neurological disease was not present, but anhidrosis and impotence were accompanying symptoms. As in similar cases, there was no change in pulse rate with change in posture or the administration of atropine. They suggested that a central lesion of the sympathetic nervous system, possibly in the hypothalamus, would explain the findings. Vega Diaz[3] recently reported in this *Journal* a case in which juvenile orthostatic hypotension disappeared with the development of slight hyperthyroidism, only to reappear after treatment for the latter condition had been given; he ascribed both conditions to hypothalamic disturbance.

Nylin and Levander[4] have studied the circulation in a case of hypotension with the aid of tagged erythrocytes. Their findings were inconclusive, for the delayed equilibration of tagged cells after a change of posture might be explained by the fall of blood pressure *per se* rather than by a redistribution of blood. These authors give to the two conditions already referred to the names sympatheticotonic and asympatheticotonic orthostatism. They place in an intermediate group the cases in which orthostatic hypotension, often with tachycardia, develops after sympathectomy. Currens[5] has measured the blood pressure of 1,000 men and women lying and standing. His findings confirm that a diastolic hypertension is common on standing; this may be a self-perpetuating mechanism leading to established hypertension. Man spends a large part of his time standing up, and the maladies mentioned are some part of the price paid for his assumption of the upright position.

AUTONOMIC RESPONSES TO BLADDER DISTENSION

In their paper on the automatic action of the bladder in patients with gross injuries of the spinal cord Head and Riddoch[6] noted that in low cervical lesions distension of the bladder caused profuse sweating of the face, neck, and arms. Guttmann and Whitteridge[7] have recently investigated the autonomic responses to bladder distension in a number of patients with severe injuries of the spinal cord, using cystometry, skin-temperature readings, and plethysmographic studies of fingers and toes, and at the same time recording the pulse, the blood pressure, subjective sensations of the patient, and the appearance of sweating and pilo-erection. The autonomic responses were found to be related to bladder pressure rather than bladder volume. The invariable response to distension in patients with cord injuries at any level was vasoconstriction in the toes. When the spinal lesion was at T.6 or lower, that is below the sympathetic outflow to the arms, there was vasodilatation of the blood vessels in the fingers, little if any change in blood pressure, and sometimes sweating of the lower part of the trunk and the legs.

It was in lesions above T.6, particularly in low cervical injuries, that the responses to distension were most conspicuous: in three men with severe spinal cord injuries in the upper thoracic region distension of the bladder caused patchy flushing of the face, the lateral aspects of the neck, the shoulders, and the upper part of the chest, and profuse sweating over the same areas and the arms. The nasopharyngeal mucosa became engorged, making breathing difficult, the pulse became slow, with extrasystoles, and the blood pressure rose. In these patients the vasoconstriction in the fingers was intense, and the considerable rise of blood pressure was thought to be due to widespread vasoconstriction caused by the reflex activity of the isolated distal segments of the spinal cord. The slowing of the pulse rate was explained as a reflex response to the rising blood pressure through the carotid sinus and aortic nerves, but it was more difficult to account for the vasodilatation of the face and neck and the congestion of the nasal mucosa. The sympathetic supply to the face and neck emerged from the spinal cord distal to the lesions, and vasoconstriction similar to that in the fingers might have been expected. These autonomic responses were considered to be an "adaptive mechanism," but their physiological basis remains uncertain. They are of some importance in the management of patients with spinal injuries, for they warn the patient and his attendants that bladder distension should be relieved. As Guttmann and Whitteridge say, "They represent alarm symptoms indicating abnormal activity of a viscus in the anaesthetic area below the level of the lesion."

1 *Arch. intern. Med.*, 1941, **67**, 546.
2 *Brit. Heart J.*, 1946, **8**, 103.
3 *British Medical Journal*, 1949, **1**, 169.
4 *Ann. intern. Med.*, 1948, **28**, 723.
5 *Amer. Heart J.*, 1948, **35**, 646.
6 *Brain*, 1917, **40**, 188.
7 Ibid., 1947, **70**, 361.

THE KING'S DOCTORS HONOURED

Honours for seven of the doctors who attended the King during his recent illness were gazetted on May 3. Sir Maurice Cassidy, Sir Thomas Dunhill, and Sir Morton Smart now become Knights Grand Cross of the Royal Victorian Order. Sir John Weir, who also attended his Majesty, was awarded the Grand Cross, which is the highest rank in the Order, in 1939. Dr. Horace Evans and Professor Paterson Ross have been appointed K.C.V.O., and the M.V.O. (Fourth Class) has been conferred on Mr. C. J. Longland and Mr. A. J. Slessor. It will be recalled that his Majesty invested Professor Learmonth with the insignia of Knight Commander of the Royal Victorian Order some weeks ago, and later Dr. John Gillies was made a Commander of the Order. Promotions in and appointments to the Royal Victorian Order are for extraordinary, important, or personal services to the Sovereign or to the Royal Family. The medical profession will welcome the announcement of these honours and the recent news of a continuing improvement in the King's health.

Sir Edward Mellanby, F.R.S., Secretary of the Medical Research Council, will deliver a lecture to commemorate the bicentenary of the birth of Edward Jenner at the Royal College of Surgeons of England (Lincoln's Inn Fields, London, W.C.) on Tuesday, May 17, at 4 p.m. He will speak on "Jenner and His Impact on Medical Science."

The next session of the General Medical Council will open on Tuesday, May 24, at 2 p.m., when the President, Sir Herbert Lightfoot Eason, will take the chair and deliver an address.

HEALTH PROPAGANDA

A new and nation-wide scheme of health propaganda was introduced by the Central Council for Health Education on May 1 and put at the disposal of all local health authorities in England, Wales, and Northern Ireland. Dr. E. K. MACDONALD, chairman of the Council, explained at a recent press conference that under the Public Health Act, 1936, and the National Health Service Act the duty of providing health education was laid upon the local health authority, a grant being obtainable from the Ministry of Health for this purpose. The Council's function was to provide advice and assistance to the health authorities, and with this object in view it was arranging the free, extended, and indefinite loan to them of exhibition material. This was in the form of transportable stands on which would be superimposed posters concerned with a series of topics. The material for each of these topics would remain with the authority for two months, after which it would be returned to the Council, refurbished, and reissued to other authorities so that there would be four sets of topics running the whole time for the first eight months of the campaign. New topics would be dealt with as occasion required.

The four topics on which posters had already been prepared were diphtheria immunization, the services provided in Part III of the National Health Service Act, food and drink infections, and sleep. Material relating to other topics was being planned so that each local health authority would receive further exhibition material (in exchange) every two months. The stands were constructed of wood and metal, attractively designed, self-lit, portable, and easily erected and dismantled. Each stand would have boldly inscribed on its fascia the name of the authority to which it was issued. It was suggested by the Council that they should be erected in large shops, showrooms of gas and electricity companies, schools, cinemas, and other places where people congregated. Such exhibitions should be reinforced by a local campaign, and suggestions for ensuring good publicity as well as literature suitable for the particular topic, lecture-slides, posters, and other material were being offered to the local health authorities. In addition, the Council was preparing a number of leaflets for the use of medical practitioners. It was often helpful for a doctor to be able to hand to a patient a leaflet explaining what he had been telling him.

Medical officers of health who would like more information about the present campaign and other aspects of the Council's work should write to Dr. Robert Sutherland, the Secretary, Tavistock House North, Tavistock Square, W.C.1.

RED CROSS SAFETY ZONES

[FROM OUR CORRESPONDENT IN GENEVA]

The Red Cross is seeking to enlarge the bounds of its responsibilities and privileges. Its guardianship has been primarily concerned with the wounded and sick on the field and with prisoners of war. Now a new convention is being constructed for the protection of civilians in wartime—a big undertaking when the totalitarian shape of modern war is considered. Apart from providing for the protection of sick persons, the aged and infirm, children, and maternity cases, the convention sets out the rights of aliens, refugees, internees, and people in occupied territories. The draft convention was worked out at the International Red Cross Conference at Stockholm last autumn in the course of ten days, and now at Geneva 250 delegates from 56 governments, with 30 observers, are scrutinizing the draft, together with the drafts of the older conventions. But lawmaking by international assemblies is an exasperating business. Apparently innocent phrases open up unsuspected difficulties, amendments go backwards and forwards between principal commissions and drafting committees and subcommittees, with the result that in ten days the commission which is studying this new convention has considered only 18 articles out of 140, and many of the points which it has discussed have been left undecided.

One question which has come forward is the protection of civil hospitals from attack. Another is the right of free passage of consignments of medical and hospital stores intended for civilians in an enemy country; a third, the setting apart of safety zones in regions where fighting is taking place, so that wounded and sick, whether combatant or non-combatant, may be sheltered, and those responsible for the supervision and food supply of such zones protected; a fourth, the permission to medical personnel of all categories to carry out their duties, and, again, the removal from encircled or besieged areas of mothers and children, the sick, and the aged.

In the article which proposes the immunity of civil hospitals it is stated that such hospitals must be as far away as possible from military objectives. But what are military objectives? In total war may not factories and industrial undertakings come within that category, and is there to be no hospital within easy reach? The objection was raised by the British delegate that the requirement was impossible in a highly industrialized community. Another article states that civil hospitals and their stores and materials must not be requisitioned or diverted from their purpose. But may not a military commander, faced with a sudden need for medical or hospital provision, seek the transfer of civil hospital accommodation or equipment? Another article lays it down that civil hospitals as well as all vehicles used for the transport of the wounded or sick must carry the Red Cross emblem (or the Red Crescent or Red Lion and Sun, as the case may be), and all medical and other personnel engaged at hospitals shall wear the Red Cross armlet. But, as the Canadian delegation pointed out, this seems to be unnecessary in countries which are not themselves the scene of conflict. During the last war Canada suffered no air raids and saw no land fighting, yet by this provision all its hospitals from the Atlantic to the Pacific and all their staff would have to be decorated with the Red Cross. This may not seem very onerous, but if the Red Cross is too widely and familiarly distributed it may tend to lose its value and privilege. These and like points have engaged the commissions in hours of discussion, and one can only hope that the result will be an instrument which, if necessity arises, will be strong and availing. Perhaps it should be added that the five delegates of Soviet Russia are taking a useful and co-operative part in the conference.

BACTERIOPHAGE AND ANTIBIOSIS

PROFESSOR GRATIA'S LECTURE

A special university lecture in pathology was given at the London School of Hygiene and Tropical Medicine on April 25 by Professor A. Gratia, of the University of Liége. Sir Alexander Fleming presided.

Professor Gratia said that the word "bacteriophage" was first used some 45 years ago. This was in 1903, when Vuillemin used the phrase "une acrasiée bactériophage." Then in 1917 the late Professor d'Herelle coined anew the word "bacteriophage" as describing the transmissible agent responsible for the lysis of Shiga bacilli. Two years later, during an epidemic of dysentery, d'Herelle observed that the filtrate of stools of recovering patients, when added to a new broth culture of Shiga bacilli, would bring about its dissolution. If the dissolved culture was then filtered and added to a second fresh culture of Shiga bacilli the same dissolution occurred again, and so on indefinitely through a series of repeated passages. In the course of these passages the activity of the agent of lysis, so far from weakening, was enhanced. Moreover, d'Herelle succeeded in obtaining the dissolution of typhoid, paratyphoid, and other bacilli by passages of the active filtrate of these different bacteria. As this filterable lytic agent was endowed with the power both of multiplication and of adaptation, d'Herelle claimed that it was a virus of bacterial cells—the same virus for all bacteria—and called it "bacteriophage."

Two Aspects of One Phenomenon

The lecturer then described the opposition to the virus theory in the early 'twenties, which was reminiscent of the famous quarrel about spontaneous generation. About this time the lecturer by chance came upon a forgotten paper by Twort on an attempt to cultivate vaccinia virus. Twort had observed that colonies of micrococci isolated from crude vaccinia pulp underwent a curious form of degeneration, this being carried

on indefinitely from one vitreous colony to a normal colony. Struck by the similarity between Twort's observations and those made later by d'Herelle, Professor Gratia repeated Twort's observations, and then, transferring a vitreous colony of micrococci isolated from vaccinia pulp into a broth culture of *Staph. aureus*, he was able to duplicate all the typical features of d'Herelle's phenomenon. He obtained a true bacteriophage active on almost any strain of *Staph. aureus* but entirely inactive on any bacteria of the enteric group. Thus it appeared that Twort's and d'Herelle's observations were two different aspects of the same phenomenon, and, contrary to d'Herelle's claim, there was not one single bacteriophage for all bacteria but there were different bacteriophages for different groups.

Later work demonstrated that bacteriophages were specific entities, behaving like germs. Nevertheless there appeared to be something of fundamental importance in the fact that phages seemed to multiply only in the presence of living cells of sensitive bacteria. An attempt was made to find out whether a staphylophage would work on dead cultures of a staphylococcus. The first attempt seemed successful: broth cultures of staphylococci killed by heat underwent lysis when a small amount of phage was added. But it soon became evident that the phage was not directly responsible for that clarification, and that the real cause was the presence of a few living staphylococci in the mixture.

Approach to Antibiosis

This work suggested that there might be organisms endowed with the power of dissolving large quantities of bacteria. The question was how to detect them. The lecturer described at some length work then undertaken which showed finally that active strains of streptothrix or actinomyces, isolated on bacterial agar, could dissolve as much as 10 times their own weight of bacterial suspensions in plain water of most saprophytic or pathogenic micro-organisms. But while living suspensions of Gram-positive bacteria were as easily dissolved as dead suspensions, Gram-negative bacteria were only dissolved when previously killed. Lysis was strongly inhibited by serum and also by electrolytes. As heavy bacterial suspensions when dissolved by actinomycetes maintained strong antigenic activity and at the same time lost their toxicity, he used them successfully, under the name "mycolysat," for the treatment of staphylococcal infections and in cases of typhoid, paratyphoid, or dysentery, and for carriers.

Thus, starting from research on bacteriophage, the field of antibiotics was entered. Those first steps showed the way and gave rise to the appropriate techniques for later discoveries. Finally, in 1944, *Actinomyces griseus* was isolated by Schatz, Bugie, and Waksman, and produced streptomycin, and now other antibiotics such as chloromycetin were being investigated.

Actinomycetes were not the only organisms which in the early investigations were found growing on plates of agar: there were also moulds as well as micrococci of all kinds. It was at this time (January, 1925) that the lecturer and his colleagues observed a contaminated culture of anthrax bacillus completely dissolved by a green mould, some kind of penicillium. At this time also he isolated a strain of *Bact. coli* which he called "coli V," producing an active substance which was not a phage, properly speaking, but some antibiotic agent, and this he called the "V principle." It was diffusible through "cellophane," while phages were not; it was remarkably stable to heat, while phages were thermolabile, and, again, it had no antigenic activity and was not transmissible in series. Even at that early date he had been impressed by certain similarities which led him to consider the relationship between the two phenomena of bacteriophage and antibiosis, and this relationship had been confirmed by further work.

Investigations with a number of collaborators had shown that the antagonism between strains of coliform organisms, for example, was less specific than was originally supposed. Hundreds of active strains had been isolated from diluted human and animal faeces. The antibiotic products of these different active strains were not all identical: the appearance of their inhibition zones, their diffusibility into agar or through cellophane, their resistance to heat, to digestive enzymes or bacterial proteases, and the specificity of the resistant colonies appearing in the zones of inhibition showed great variety. These observations suggested that there were several different active principles, to which the generic name "colicins" had been given. At least 17 different "colicins" had been recognized and studied, and as a result of further work some 60 new bacteriophages had been obtained and classified into groups.

The lecturer showed a table giving the results of extensive tests of resistant colonies—resistant to "colicins" on the one hand or to bacteriophages on the other. He had previously shown that resistant colonies of coliform organisms selected by his "V principle" remained sensitive to phage and that other colonies which were resistant to phage remained sensitive to the "V principle." An investigation was then undertaken of all the resistant variants in this mass of material, comprising at least 17 "colicins" and 60 bacteriophages. He found that all mutants resistant to certain colicins were also resistant to certain phages, and his conclusion was therefore that, while there was no complete identity between the phenomena of antibiosis and bacteriophage, there was evidence of common factors, confirming the intuition which he had had 20 years ago that there was a relationship between the two. He resisted the temptation to enter into philosophical speculation about the nature of this relationship, and ended his lecture with a quotation from Craigie:

"Most of us probably feel that what is known about these various subjects (bacteriophages, nucleoproteins, transformation of pneumococcal types, genes) represents, so to speak, isolated jigsaw-puzzle pieces belonging to the same picture. When the missing intervening pieces are found and assembled in place a map of new territory will be revealed."

REHABILITATION OF THE DEAF

AMERICAN VIEWS

A postgraduate lecture with a transatlantic flavour was delivered at the Institute of Laryngology and Otology in London on May 7 by Dr. S. Richard Silverman, director of the Central Institute of the Deaf, St. Louis, Missouri.

Dr. Silverman began with the remark that, "with all due respect to my otological friends, the fenestrators, the irradiators, and the puffers and squirters," there was very little, medically and surgically, that could be done for the deaf; yet the otologist had great opportunities in dealing with the problem of the deafened. In the United States many factors had caused a recent surge of interest in this subject. Among them were the rapid developments in the science of electro-acoustics; the evolution of different surgical techniques, particularly the fenestration operation; new investigations into the physiology of hearing—despite the glib expositions in the textbooks, it was not yet known how the ear worked or how sound was converted into a nervous impulse; the popularity of motion pictures and the radio; and, finally, the tendency for "peripheral workers" (meaning politicians, social workers, and psychologists) to come together to do something for war casualties.

Hearing-aids

The greatest help offered to the deafened person was the vacuum-tube hearing-aid. There were two types of deafened persons: one requiring amplified sound, and hearing better when the voice was raised, the other able to hear speech of ordinary loudness but not able properly to distinguish syllables. With this second type, mere amplification only intensified the babel. The majority of persons who had purchased hearing-aids and discarded them belonged to this second group. On the other hand, certain people even in this category could be helped by a hearing-aid.

He had been quoted as saying that audiometers should be thrown out of the window, but that was a misinterpretation. The audiometer was a valuable instrument, but its limitations must be remembered. It could help in deciding in a given case whether a hearing-aid would be useful and to which ear it should be fitted. Broadly speaking, if a person had a loss across the speech range of 30 to 35 decibels or more in the better ear the use of a hearing-aid should be considered. Putting aside cosmetic considerations, statistics would show that about 90% of patients needed air conduction instruments and 10% bone conduction.

No hearing-aid was perfect, and no hearing-aid could enable a person to hear as though he had normal hearing. Auditory training for the user of a hearing-aid must be insisted on not merely in manipulating the instrument but in obtaining what the lecturer called "cerebral reorientation" to speech. The user of a hearing-aid must learn to listen. Three levels of hearing might be defined: the primitive level, at which the person knew there were sounds but was unable to differentiate them; the awareness level, exemplified in the person about to cross the street; and the highest level, as shown in the exchange of speech. One of the most common expressions among deaf ex-Servicemen was that the world had gone dead; there was an eeriness in not hearing the traffic in the streets or the wind in the trees, and even at the primitive level to get some kind of sound appreciation was helpful.

Lip-reading

Dr. Silverman believed in the value of lip-reading, or "speech reading" as it was called in America. There was not much correlation between native intelligence and ability to lip-read. Many intellectual people—people in the professions—were poor lip-readers. Dr. Silverman tried an experiment on his highly educated audience. He wrote on the board the words "bat," "man," and "pan," then moved his lips without sound, and asked his audience which word he had pronounced. Opinion was about equally divided between the three words, and then he explained that they were all right and all wrong, because in the movement of the lips there could be no distinction between the three. Lip-reading was of value because it evoked some effort from the patient. Too often people supposed that treatment was something which was to be done to them. But rehabilitation, with hearing as with other things, was not effective unless the patient got hold of the idea that he was doing something for himself.

In addition to hearing-aids, auditory training, and lip-reading, one other thing was essential—namely, speech conservation or correction. The ears were the governors of speech. With impaired hearing speech began to deteriorate. He regretted to find in England speech correction so far divorced from the organization for helping the deaf. Finally, if hearing could not be improved or corrected, at least the patient might be taught to live with his disability graciously. Otologists and others often became so engrossed with decibels and frequency responses and articulation tests that they forgot that the patients themselves were not particularly interested in these things. The adjustment of the social and emotional life to the hearing defect was the important thing. The otologist should remember that the person who was hard of hearing was a person with a defective ear—not an ear with a person attached to it.

VISIT OF SWEDISH PAEDIATRICIANS

Last week the British Paediatric Association entertained as their guests some 30 distinguished paediatricians from Sweden. The British Medical Association held a reception on May 2, and later in the week Swedish paediatricians joined the B.P.A. in its annual meeting at Windermere. Many British doctors had the opportunity of meeting our Swedish guests at a dinner held in their honour on May 3 in the Apothecaries Hall, London. Dr. Hugh Ashby, President of the B.P.A., in a speech of welcome said that this was the first time his association had invited a group of paediatricians from another country to attend its meetings. This event happily coincided with the 21st anniversary of the founding of the B.P.A. Great advances had been made in paediatrics in Sweden during recent years and had been followed with intense interest by workers in Britain. At the same time he thought that the fall in infant mortality in this country from 150 to 34 per thousand in 50 years was "pretty good going." New Zealand was the only other country with which the record of Sweden for small infant mortality could be compared. Sweden had perhaps the most modern children's hospital in the world. Medicine, concluded Dr. Ashby, should become more international, and this would be helped by such visits as the present one and the delightful visit paid by the British Paediatric Association to Sweden last year, where they had been so hospitably treated.

In reply Professor Lichtenstein said that during the seventeenth and early part of the eighteenth centuries Swedish doctors were in the habit of visiting the country of Sydenham and Glisson. He mentioned the Swedish indebtedness to British workers, observing that international co-operation was more necessary now than ever before. He ended by saying: "We know in Sweden that if we enjoy freedom of thought and speech and science we owe that to Britain."

Professor E. C. Dodds, Master of the Apothecaries, paid his tribute to Swedish science and said that in no country in Europe did they owe so much in the matter of collaboration. Professor Dodds made some interesting remarks on the history of the Society of Apothecaries. Lord Moran also spoke, and Lord Webb-Johnson praised the Manchester School of Paediatrics, saying that he had sat at the feet of Dr. Ashby's father, the author with G. A. Wright of that well-known work *Diseases of Children*.

Reports of Societies

PROBLEMS OF CHILDHOOD

The problems of young children engaged the attention of the Section of Paediatrics of the Royal Society of Medicine on April 22, Dr. JAMES SMELLIE presiding, and of the Child Psychiatry Section of the Royal Medico-Psychological Association on April 23, when Dr. MABERLY was in the chair.

Toilet Training

The Paediatrics Section first heard Mr. ADAM CURLE, of the Institute of Human Relations, give an account of the methods of training in primitive societies. In the more aggressive communities the belief in the necessity for cleanliness was enforced by threats and punishment, while in peaceful communities there was a more easy-going attitude, the child being allowed to acquire good habits in its own time. In the more sophisticated communities in the last 60 to 80 years better amenities in home life had heightened the impulse towards toilet training at an early age, using methods varying from threats of punishment or ostracism to rewards for success. Mr. Curle described some studies he had made of communities in isolated villages where everyone showed great interest in all the children. Some of the practices of the primitive societies, such as elaborate initiation ceremonies into adult life, gave the members a strong feeling of unity with the group in contrast to the practice in a more highly civilized society of surrounding a child with protective care and then leaving it to its own devices at adolescence, which produced a feeling of isolation.

Miss AGATHA BOWLEY, of the Foundling Hospital Research Centre, said that habit training was a misnomer; it was not a mere matter of conditioning, the emotions were involved. She quoted opinions of workers in this field that the child who was allowed to develop without training would, if provided with the appropriate utensils, train himself after the age of 18 months. It was possible to condition small babies to be clean, but with intellectual development the habit broke down and this caused distress to the mother and might damage the mother-child relationship. "Placid but not premature potting" was her advice, and the pot should not be too much in evidence until the baby was a year old and had formed a steady emotional relationship with one adult. Approval and disapproval should be only mildly expressed.

The discussion that followed showed a cleavage of opinion. Dr. R. S. MACKEITH pointed out that if no training was undertaken for the first 18 months there was an enormous amount of washing to be done. Dr. I. HELMAN spoke of the results of a survey she carried out to discover whether the attitude of "saving the washing" was justified. She found that few children were clean before the age of 2, regardless of when training was begun. This was important, because a great deal of energy was wasted by too early a start, and the happy relationship between mother and child might be jeopardized. With children whose training started nearer the age of 2 the training seldom took more than a few months.

Dr. LINDSAY BATTEN said that as soon as a child got on to a mixed diet its urine became more irritating, and it was extremely

common for children of over eight months to have very sore genitalia. If they could be persuaded to be wet less often it would be an advantage. Dr. PATRICIA HOLMAN said that it was not good enough to say that the mother should put up with the washing, especially in a working-class home. That might be the last straw which destroyed her health.

Dr. LETITIA FAIRFIELD reminded the meeting that life was not only for babies; adults were entitled to some consideration. It was doubtful whether a child would correct itself automatically; some gentle pressure and direction from adults were needed. Dr. FELIX BROWN said that children should achieve habit training sooner or later, but excessive pressure should not be put upon them. Dr. SMELLIE said that there was such a thing as the gastro-colic reflex, and normal physiological functions could be encouraged, promoted, and trained.

Psychiatric Aspects of Infant Feeding

At the meeting of the Child Psychiatry Section of the Royal Medico-Psychological Association, Dr. RICHARD H. DOBBS said that after birth the most important happening in the child's life was feeding. The mother had comparatively simple instincts, but superimposed on them there might be emotional difficulties; she might have fears that she would fail, or she might have feelings of prudery and disgust which would complicate the process of breast-feeding. Breast-feeding was of great importance for the future character of the child. Breast-fed children suffered much less from ailments and had a lower mortality rate than bottle-fed babies, but the disadvantages of bottle-feeding disappeared as poverty was left behind and there might come a time when it would be difficult to point to a better survival rate as one of the advantages of breast-feeding. Regular feeds were not essential nutritionally or medically, but a certain routine and habit in feeding was a good thing if it could be achieved without any great disturbance either to lactation or to the child's comfort. Motherless babies did not miss their mothers for the first six or seven months, but in later years they might suffer harm if there was a constant stream of nurses; even if there was only one she would not provide the extra love and care which a mother bestowed, and this was of importance in later years.

Dr. MILDRED E. CREAK said that the hurried impersonal routine carried out in many maternity units where the baby was kept in the nursery and given to the mother only at feeding times had created many difficult situations. The baby should be kept near its mother. Dr. MABERLY said that it was desirable that the child-guidance clinics and the maternity and child-welfare centres should work closely together.

Children in Hospital

Dr. A. G. WATKINS, Royal Infirmary, Cardiff, said that every child should be seen first in the privacy of a small room by a responsible medical officer and an experienced sister. The child who caused trouble in the ward was usually the child who was already maladjusted. Normal children settled down quickly, and the grossly defective child did not give much trouble, but the mildly defective child was sometimes difficult. A great deal depended on how the parents had approached the child regarding its need for hospital treatment. The acutely ill child adjusted quickly to the new surroundings and appreciated the comfort provided. The child should be allowed to bring its own toys, especially the ones it usually took to bed. If a child was old enough, any procedure to be carried out should be explained beforehand. A full explanation should also be given to the parents by the doctor; they were more satisfied and then the child was more contented. Certain types of children were upset after visits; others were better after a visit from the parents. This was something one could not be too dogmatic about. It should be left in the hands of the sister to decide whether a child should be allowed visitors or not. He never hesitated to allow visitors when a child was desperately ill.

Miss ANNA FREUD said that when a child was ill it was easy to forget how harmful it was for the child to be in a state of anxiety, separated from its home surroundings. Those who worked in hospitals said that children were better behaved, they resented less what was done to them, they were less easily emotionally upset, and they usually ate and slept better, but this was because the child became all body and its individuality retreated. Mind and body worked together and it was not profitable to treat them separately. There was a great deal of evidence that in the child, whether ill or well, the life of the body was accompanied by a rich life of the mind. Young children separated forcibly and for a long period from their mothers showed all the signs of a melancholic state, including even the signs of arrested bodily development. The child was not only separated from familiar people, he was separated from all his habits, and this might create as grave a disturbance.

Children of school age put much of their feeling into their interests; in hospital their interests had to be left at home, and such occupation as they had would not take up more than a few hours in the day. Children of that age needed continuous occupation. When a child was ill it lost interest and had the experience of being nursed again. Some children reacted by sinking back into babyhood or else they reacted against nursing care. Many children regarded the pain they suffered and the restrictions imposed upon them as punishment, and to such children the experience of being ill was dangerous. When children went through an illness at home they were helped by the people who knew them. In hospital they went through a difficult experience in isolation.

Dr. MABERLY felt that nurses preferred the depressed melancholic child because it was easier to manage. He mentioned the possibility of the mother coming into hospital and taking part in the nursing of the child, which seemed to be a successful solution to one part of the problem. Dr. HUNTER, of the Tavistock Clinic, said that children were much less keen on seeing their parents after six or eight weeks in hospital. The problem of the child who had to be nursed in a cot was interesting; such children appeared to suffer from a particular form of withdrawal not experienced by children who were up and about.

CARE OF THE ELDERLY

The Medical Society for the Care of the Elderly held a conference at Liverpool on April 1 and 2, in Belmont Road Hospital. The meeting was opened by Sir HENRY COHEN, who paid tribute to the work of Dr. Lloyd Hughes, the regional medical officer for Liverpool, and praised the work which had been done at Belmont Road Hospital.

Dr. LLOYD HUGHES described the steps which were being taken to meet the problems of old age in the region. He mentioned the setting up of a geriatric advisory committee to start work on these matters and outlined the progress which had already been made. Dr. Lloyd Hughes stressed the importance of finding housing and accommodation for those elderly patients who could be discharged from hospital. The Nuffield Foundation were contemplating the creation of experimental "half-way houses" for such cases in Liverpool.

Lord AMULREE told the conference of the interest which the Ministry of Health was taking in the prevention and treatment of sickness in the elderly. It was important for those who were doing the work to make their needs and their plans for future development known to the hospital management committees and regional boards. The Ministry would lend a sympathetic ear to any suggestions likely to free beds badly needed for other patients.

Dr. C. O. STALLYBRASS spoke on the work of the geriatric advisory committee. The members had made it their duty to look into matters personally and had tried to formulate some general principles. They had found that with old people social and psychological problems were as important as the purely physical ones. When all these had been investigated and assessed, treatment of the old person could begin.

Dr. D. G. HENRY, who had been medical officer to the Belmont Road Hospital for eighteen years, spoke as a general practitioner. More old people had to be cared for by fewer young ones. At the same time, the sense of responsibility within the family had altered. Besides the temperamental difficulties arising in the aged, current social conditions sometimes led to malnutrition. Extended social welfare activity was needed.

Miss CAPLE, almoner to the Leeds Geriatric Unit, also emphasized this aspect, while Dr. R. N. TATTERSALL gave an account of the medical work in this unit. He stressed the need for preliminary investigation and assessment of all elderly patients coming into hospital, mentioning the wide variety of pathological conditions encountered.

Inactivity in Old Age

On the second day Dr. J. W. AFFLECK, of Leeds, read a paper on "Personality Factors in the Senile Psychoses." The patient must be regarded as a personality and not just as a case of senile dementia or paranoia. The various types were intermingled in the elderly and were modified by the social surroundings of the old person. Dependence on others, loneliness, and physical disability complicated the picture and gave the patient little opportunity to regain lost self-esteem.

Dr. MARJORY WARREN reviewed the results of inactivity in old age. After describing some aspects of physiological deterioration she mentioned the psychological apathy associated with prolonged rest in bed. Active treatment of all physical disabilities which limited a patient's mobility was necessary. All social and domestic agencies which could lighten the mental or bodily burden must be recruited, and team work was needed to tackle the life problem of the patient in a happy, congenial, and stimulating atmosphere. Whenever possible old folk should be kept at home and not sent to hospital.

Psychological difficulties were mentioned by Dr. R. KEMP. Hitherto the medical profession had turned away from the care of old people, and this neglect had led to many false ideas about disease in the aged. The troubles of the elderly were often more mental than physical. If bedfastness and demoralization were prevented, active treatment would often produce a surprising change in the patient's activity, health, and happiness.

Dr. T. H. HOWELL urged the need for more out-patient clinics for elderly patients. These, especially when combined with domiciliary visits, diminished the numbers of patients needing to enter hospital. He agreed with Dr. Kemp and Dr. Warren on the need to keep old people active and alert in their own homes.

After a discussion on chronic bronchitis by Dr. R. M. EVANS, a paper on malnutrition in the elderly was read by Dr. H. FULD. He compared his experiences at Belsen camp with some of the cases seen in Liverpool. Discussing the physiology of nutrition in old age, he criticized recent experimental work on diet in rats when applied to human beings. A low protein intake was often found in patients admitted to Belmont Road Hospital with tissue wastage, anaemia, and oedema. Avitaminoses were not uncommon, especially among the many old people who appeared to live on bread-and-jam and tea.

ALCOHOLISM AS A NEUROTIC SYMPTOM

Dr. R. D. NEWTON, speaking at the annual general meeting of the Society for the Study of Addiction held on April 19, said that there was still little agreement on the causes of addiction and little progress had been made in prevention or treatment. A primary difficulty seemed to be that alcoholism was sometimes regarded as a disease in itself, while at other times it was viewed as a symptom. Alcoholism or drug-taking might be included among other reactions in a psychopathic personality or might be symptoms of a neurosis or psychosis.

Addiction to alcohol was a behaviour disorder closely related to other behaviour disorders of hysterical origin. In investigating cases of addiction one would expect to find a history of hysterical personality. Children who were over-indulged or who had been starved of affection and fearful of punishment might have a character structure in which the sense of personal helplessness was so deeply embedded that it lasted throughout life. Their reaction to difficulties was to retreat within themselves and build up a world of illusion, and alcohol helped them to do this. Patients who alternated between self-pity and an aggressive anxiety which made it difficult for them to establish contact with their fellows took alcohol to blunt their sensitivities—a significant difference in the use of alcohol. Dr. Newton gave some case histories showing addicts to alcohol as normal people in abnormal circumstances. No evidence was found of any constitutional or hereditary factors, and all the information available suggested that these patients could have been successfully treated for their psychological disorders in childhood, adolescence, or early adult life.

Mr. STANLEY LEE, F.R.C.S., secretary of the Society, in presenting the annual report, said that Professor Golla of the Burden Neurological Institute had accepted the office of president for the ensuing year. Money had been made available for research into the causes of the craving for alcohol. To carry on the Society's work it had been necessary to dip deeply into its reserves, and an appeal was made for new members and increased support.

HEBERDEN SOCIETY

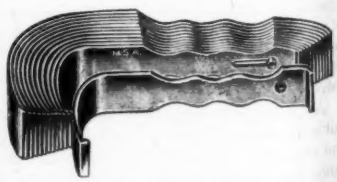
The Heberden Society held a "Case Conference" on April 8 at the West London Hospital. This was an endeavour to approach the problem of rheumatic disease from a clinico-social aspect, and the technique used was that developed by the School of Social Medicine at Oxford. Dr. ALICE STEWART, from this department, took the chair at the invitation of the president of the Society, Dr. W. S. C. COPEMAN. Dr. Copeman, in opening the meeting, drew attention to the effect of the concentration by the teaching hospitals on the pathology of disease and on good teaching material to the neglect of the social implications of illness.

Two cases, one of rheumatoid arthritis and one of ankylosing spondylitis, were presented by Dr. R. M. MASON, and the social case work carried out was described by Miss M. W. EDMINSON, head almoner of the Arthur Stanley Institute, Middlesex Hospital, and Miss B. E. LEMAN, out-patient almoner of the West London Hospital. Dr. Alice Stewart questioned whether such cases would have occurred at all if social research work had been carried out as actively as had pathological. She thought that an epidemiological study of the rheumatic diseases in the community would be a valuable advance in the investigation of these conditions. She suggested that a committee of interested doctors and almoners should be set up to work out the main headings to be used in social case reports. These should include the family constitution, an assessment of major financial stresses, housing arrangements, relevant public services available, and follow-up arrangements. Finally, the results achieved by the various social services available, as distinct from the purely medical aspect, should be assessed at some time in each individual case.

Preparations and Appliances

SET OF NESTED RETRACTORS

Sir HENEAGE OGILVIE writes: In my Bradshaw lecture in 1947 I described a set of nested retractors. The ones I was then using were a home-made set made before the war by my chauffeur. Since the lecture I have been working out the design with Dr. Greville, of the Medical Supply Association, and have, I think, got as satisfactory a pattern as is possible within the limits of compactness. I and my colleagues at Guy's Hospital find these retractors very useful for all operations at the bottom of a deep cavity, such as abdomino-perineal resection of the rectum, nephrectomy, vagotomy, and all operations on the oesophagus and cardiac end of the stomach, and operations on the thoracic and lumbar sympathetic systems.



The set consists of twelve retractors of similar curve but varying length, held together by a folding bolt for sterilizing and until they are needed.

Correspondence

An Unfortunate Precedent

SIR,—To doubt the impartiality of Lord Moran in his capacity as chairman of the Committee for Distinction Awards to Specialists verges on the imbecile; but the letter (April 30, p. 774) published over the names of eight officers of the Royal College of Physicians does indicate a cause for apprehension. Thus (quoting your leading article of April 23, p. 717), they assert that it is insulting to suggest that in future Fellows of the Royal College of Physicians may hesitate to criticize the President lest they be passed over when distinction awards are made.

Of course, such a idea is ludicrous, but it has always been supposed that not Fellows but Members live in the shadow of dangers of such a type; and now their liberty is in even greater jeopardy, because, as the letter from the eight officers suggests, at least by implication, merit awards for physicians will go to Fellows.

Is there anyone so temerarious as to suggest that all Fellows have attained to their glory because of greater professional merit than any Member? I think the answer must be No. It is notorious that luck (perhaps, as many supposed, biased by prejudice) plays an even greater part in elections to the fellowship than in the examination for the membership. In the past this mattered little, except to the *amour-propre* of senior Members; but in the future it will involve financial loss.

Is it not time that the Fellowship of the Royal College of Physicians of London should be awarded for professional eminence, and that it should not be unreasonably withheld from those who have attained the necessary professional position? The present procedure by which a nomination can be held back by the Council and so never come before the Comitia reeks of totalitarianism.

All the Members with whom I have discussed the matter agree with me, but, being less senior than I, fear that the Fellowship will be for ever out of their reach if they become vocal.—I am, etc.,

London, W.1. A. PINEY.

SIR,—It is surprising to read (April 30, p. 774) that no less than eight officials of the Royal College of Physicians missed the object of your leading article (April 23, p. 717) in which you expressed doubts as to the wisdom of the P.R.C.P. holding the chairmanship of the Distinction Awards Committee. I feel sure few would object to Lord Moran in a personal capacity serving on that Committee on an equal level with his colleagues, and the propriety of such membership was never questioned in your article. The difference between chairmanship and membership of that Committee seems to me to be of the greatest importance, because the holding of the chairmanship as well as the presidency of the College would place him in a commanding and probably an unenviable position. It is not clear whether the eight officials write on behalf of other Fellows and Members of the College or in a personal capacity, but, whether or not they regard the suggestions in your article about favouritism and fear of criticism as a personal insult, it is surely of greater importance that these dangers which many specialists fear are clearly foreseen, and you will no doubt be congratulated by many specialists who are Fellows and Members of this ancient College for pointing them out.

As a Member of the College, it appears to me that the possible dangers that might arise are twofold. First, that while no one, least of all the writer, wants to criticize Lord Moran's sincerity and integrity, which no doubt would be shown as chairman of the Committee, the possibility must be foreseen that the distinction awards may excite criticism and, rightly or wrongly, perhaps a sense of grievance among distinguished aspirants to awards. It does not require much imagination to foresee a condition of affairs arising when specialists become divided up into cliques and undesirable rivalries. Secondly, our position as Fellows and Members of the College is entirely changed directly we become dependent on our fountain-head, the President, for possible financial advancement. Some may feel that the presidential chair should remain above the level of financial remuneration, and one shudders to imagine the views of our forefathers were they able to survey the situation arising.

Those who have served in the Forces are well aware of the dangers of any form of criticism of superior officers; this is so much realized that no criticism is ever contemplated. It is fear, either conscious or subconscious, which prevents any form of criticism or even undue initiative. On active service such conditions are regarded as a necessary evil. But where they pervade civilian life, and indeed are instituted by the profession itself, it is not surprising that specialists may view the situation with dismay and apprehension. Already by compulsion much of our financial remuneration is subject to the officialdom of the Ministry of Health, and no doubt there are some Fellows and Members who hope that their relationship to the College may not develop on a similar footing.—I am, etc.,

SPECIALIST AND M.R.C.P.

Treatment of Basal-cell Carcinoma

SIR,—The final sentence in the article by Sir Cecil Wakeley and Mr. Peter Childs on basal-cell carcinoma (April 30, p. 737) states that "surgical excision of all rodent ulcers is recommended." I feel bound to challenge so sweeping a statement.

Small basal-cell carcinomata can sometimes be eradicated by a wide variety of therapeutic procedures, but surgical excision and irradiation are the most consistently effective. Patients have no particular bias in favour of a treatment method, and ask only that their tumour shall be dealt with adequately from the first and that they shall be left with as little scarring as possible. The tragedies that still occur with this disease are nearly always due to incomplete excision or inadequate irradiation at the time that the first treatment is given. It is more important that the first treatment should be efficient than that either method should be preferred. Both surgery and irradiation have a useful part to play, but I did not think that anyone who had an extensive experience of the treatment of basal-cell carcinomata would to-day deny that radiotherapy was the more suitable method of treatment for the majority of these patients.

Sir Cecil Wakeley and Mr. Peter Childs give particulars of 27 cases of basal-cell carcinoma occurring at sites other than the face and the scalp, selecting for special mention the uncommon sites where these tumours are more suitable for surgical excision. They give the result in only three of these cases (recurrence-free at 9 years, 4 years, and 2 years) and in none of the other 210 cases referred to where the tumour was situated on the face or scalp. If categorical statements of the kind contained in this article, which contradict accepted practice in most centres where large numbers of these cases are seen, are to be made, they should be backed by a clear statement of fact and not merely by an expression of hope that "there should be no recurrence with adequate surgical excision."

It would require considerable space to take up each point quoted by them in favour of excision—in my opinion some of these are misleading and others are untrue. I agree that recurrence after failure of irradiation is an indication for surgery—unfortunately the recurrences that we see after surgery are not often suitable for radiotherapy. Important considerations of relative cosmetic effect and the occasional need for extensive plastic repair following excision are passed over lightly. Only one concession is made, when it is suggested that in some cases of multiple superficial lesions irradiation may have practical advantages over multiple excisions. Shortly afterwards the really dreadful sentence, "Only rarely need a patient be condemned to irradiation on account of poor health," occurs. What kind of radiotherapy can they have seen? To take only one common example, patients with basal-cell carcinomata of the eyelids have generally a better chance of cure and less deformity with irradiation than with surgery, quite apart from "less time lost from work, admission to hospital, and mental trauma," which, in these cases at least, are wrongly claimed as surgical advantages. "Mental trauma" is surely special pleading—at least I have never had to give "premedication" to my patients with rodent ulcers "to diminish their worry."

The following table is presented to show the results obtained with 474 patients treated by *x* rays up to the end of 1944, and to indicate what has been done with one method of radiotherapy.

The policy of treating the majority of these tumours by radiotherapy when they occur on the face, neck, or scalp, and of excising most of the solitary ones that occur elsewhere, as well as those few which fail to respond to irradiation, has resulted in the eradication of the disease in nearly all the previously untreated patients whom I have seen since 1935. I know of only one which persisted and contributed towards the patient's death, and this, treated by both surgery and irradiation, was extensively involving bone when the patient was first seen. This may, of course, have also happened in some others which were lost sight of during the war and which we are now trying to trace. The table needs to be brought up to date, but the available facts are there to be examined and interpreted; every known recurrence, however trivial, is included, even if dealt with successfully by further irradiation.

Results of Treatment by X Rays of New Cases of Basal-cell Carcinoma, 1935–44

	No. of Cases Treated	*Lost Sight of	Died of Intercurrent Disease	Recurred	Recurrence-free	Percentage free from Recurrence
Patients treated more than 10 years ago, 1935–37	68	21	9	3	35	92
Patients treated more than 7 years ago, 1935–40	256	69	56	18	143	89
Patients treated more than 5 years ago, 1935–42	368	72	57	27	212	89
Patients treated more than 3 years ago, 1935–44	474	89	49	36	300	89

One old lady died of intercurrent disease with some residual tumour present, and one died with an active growth which hastened her death. All other patients whose tumours recurred were re-treated by surgery or irradiation and were disease-free when last seen.

A number of other large series of patients with rodent ulcers treated by radiotherapy have been published in recent years. If surgical excision of every rodent ulcer is to be recommended, it is desirable that the facts on which this recommendation is based be presented for assessment and comparison.

Surgical excision and irradiation are both available for patients with rodent ulcers; a judicious selection of the method or combination of methods best suited to each individual patient produces not only freedom from recurrence but excellent cosmetic results as well. Surgeons and radiotherapists do better by working together than by claiming exclusiveness.—I am, etc.,

London, S.W.3. D. W. SMITHERS.

Resection of the Fallopian Tube

SIR,—Lately, after salpingostomy, instead of inserting catgut to keep the tube open I have been using a thin strip of oxycel. I have only done this in a limited number of cases, and they are too recent to be able to forecast about pregnancy, but the *x*-ray reports have been satisfactory with regard to patency.

I am not sure if this is an original procedure, but I have not seen a note of it elsewhere.—I am, etc.,

Dublin. BETHEL SOLOMONS.

Statistics and Health Education

SIR,—Dr. F. Gray's letter (April 16, p. 680) brims over with ideas—some very good—but he has not subcultured and isolated the better ones for close and critical analysis. He appears to chafe unduly at the prevailing practice among public-health workers of collecting and examining morbidity statistics before taking preventive action in certain fields. Inquiry, sorting, and computation are as necessary preludes to the logical planning of prophylactic measures as diagnosis is to treatment. His suggestion that "the problems of real life" would be solved by subsidizing selected general practitioners to undertake research into these problems can surely, if carried out, get us no further than to convert this *crème de la crème* of G.P.s into clinical specialists or social statisticians—very good in itself but not really what Dr. Gray and I are aiming at.

Let each cobbler stick to his most accustomed last. Let the Ministry of National Insurance (and any others who can and care to) collect and publish morbidity statistics; let G.P.s (and others) treat the sick and discover and make known the intimate social pathology influencing recognizable physical and mental disorders. Then Dr. Gray may leave the health educator to use this (and other) information and to ascertain where, among which sections of the community, and on what aspects of health and disease ignorance is most manifest. In this way health instruction to the laity can be most appropriately and effectively planned.

Dr. Gray asserts that "attempts at preventive medicine are being made in a sort of vacuum—hence their ill success." The disappearance from this country of leprosy, typhus, malaria, plague, and cholera; the considerable diminution in smallpox, typhoid, scurvy, rickets, tuberculosis, and diphtheria; together with the progressive decline in the mortality rates for all age groups, and especially among infants, are apparently among the forgotten achievements of applied preventive medicine. I suggest that any remaining "vacuum" can be filled by accurate social and medical statistics. Well-conducted sample surveys among most types of community will yield reliable data on the prevailing needs and will provide a measure of the effectiveness of health education measures. Health education of the individual is not quite the same matter as teaching health to community groups. They are related subjects but based on different criteria (statistics), and each calls for a separate technique.—I am, etc.,

London, S.W.1. W. HARTSTON.

Food, Health, and Education

SIR,—It is now known that the streams of advice and informal instruction upon the choice and the cooking of food to which since 1940 the Ministry of Food has treated the housewives are to be strained into a melting-pot and left to simmer awhile. Some of the work will be taken over by those of the local education authorities who are sufficiently interested to find a place for it; and the Ministry of Food will apparently be maintaining a small central staff and a dispersed body of voluntary "food leaders," whose real activities have never been precisely assessed. Presumably the Ministry will also continue to use the Press and radio.

So long as the conditions of supply and rationing were liable to abrupt changes it was natural that the task of instructing the public should fall to the Ministry of Food, for, after all, no other Ministry could have handled the shifting situation. But it is now pertinent to ask what part the local health departments will be expected to play; and it is no less necessary to point out that the country is faced with some serious and interrelated problems in the nutritional field of public health. If the time has come to take stock of what is in the melting-pot, then we had better decide what kind of educational brew we need.

The advice services initiated by the Ministry of Food were plainly intended to shepherd the housewife through the complexities of wartime rationing. But the quality of the problem has now changed; and this change in quality is best summarized under three propositions: (1) The published figures suggest that the average diet has been remarkably well balanced on a day-to-day basis; that is to say, while there has been a certain element of monotony, the constituents of the diet have somehow combined to sustain a reasonable level of stamina and a good growth record. (2) But a shift in the proportion of supplies (e.g., more sugar and less meat) might have the effect of throwing the average diet out of balance, and it is difficult to see how this is to be prevented in a free community except through a process of education. (3) Even more important is it for us to face the fact that what we believe to be our traditional pattern of diet may have passed away for ever. The typical British diet of 1970 may, in brief, have to be something very different from the typical middle-class diet of 1930 (which was presumably the standard most working-class families would have aimed to reach if their means had permitted).

It is no longer a matter of persuading a people to adjust itself to the vagaries of wartime rationing. The concept we need is that of a long-term process of formal and informal education the components of which are integrated into a continuous scheme. The problem has become less administrative or purely educational than medical. It concerns neither the worries of a Minister of Food nor the natural wish of a few people to attend classes on cooking and food management; it concerns the subtle and elusive question of the precise part played by a balanced dietary in maintaining and improving health and working capacity. For this reason it is, in some measure at least, an affair of the Ministry of Health and of the local health authorities.

What are the elements in our present diet that have combined to give it balance? We can only surmise; but if we prefer to err on the safe side we may mention the larger and far more even consumption of milk, the provision of welfare foods, the lightly milled flour, the higher (though still inadequate) consumption of vegetables, the higher consumption of potatoes, the restricted consumption of sugar, and, finally, a trend towards the made-up or "mixed protein" type of dish in place of the Sunday roast followed by a week of scraps, cereal products, and oddments. Physiologically it is the day-to-day fare that matters, not the total components of a dietary as estimated over the course of a week or month. Nutrition is a continuous process. And while an occasional feast day and an occasional period of austerity clearly make for most consumers very little difference, one may assume that the nutritional level is better maintained where the day-to-day or even the meal-to-meal diet is a soundly balanced one.

Partly by luck and partly by judgment the people of this country have been since 1939 manœuvred closer and closer to a dietary that approximates to what we should approve. Can they be persuaded to stay there and to make further progress? Now, if the task of instructing the public on food matters is to be divided between the Ministries of Food and Education, there is a certain risk involved. The Ministry of Food may tend to view the task, so far as it retains its powers, as merely a continuation of its wartime activities and not to appreciate the change that has come over the quality of the problem. The Ministry of Education, on the other hand, may tend to concentrate on the provision of more or less formal classes under its scheme of adult education; and it is evident that such classes, indispensable as they are, do not reach more than a very limited section of the housewives of the country. Such classes were in any case normally provided before the war by a number of the education authorities, and we should merely have an extension of the same practice without due consideration of the urgent medical problems with which we are now faced.

It is surely desirable that someone or some committee should intervene. What we need is a careful and objective assessment of the real effect of the "advice" work of the Ministry of Food and the outlines of a broad scheme of formal and informal instruction and advice that will gradually leaven the thoughts of the consuming public over a term of years or even of generations. It should be the aim of any community to make each generation better nourished than was its predecessor, and that is partly a matter of food supplies and greatly a matter of education. But the leaven must begin its work in the schools and influence every age and condition of life. A scheme of this nature cannot necessarily be implemented without delay—patently in present circumstances it could not—but that is no reason why it should not be foreshadowed in broad outline.

If the intervention comes, it should be medical; and preferably it should be extra-ministerial. Not that the Ministries are unfitted to look after their own affairs, but this is a case where the public interest would be best served by a frank, inclusive, and unhurried review of all the complex factors involved.—I am, etc.,

Oxford. F. LE GROS CLARK.

Treatment of Rheumatoid Arthritis by Vasodilatation

SIR,—The results of treatment for rheumatoid arthritis have remained unsatisfactory. Recently a number of therapeutic measures have been tried, all attempting to produce increased blood supply to the diseased joints. Thus spinal pumping, blood and plasma infusions, and intravenous T.A.B. injections have been given to promote vasodilatation. It is possible that the remissions caused by jaundice and by infusions of blood from pregnant women are also caused by improved blood supply to the diseased joints. The ordinary physiotherapeutic measures, such as radiant heat, wax baths, short-wave diathermy, etc., as a rule only given for short periods, also aid in increasing the circulation of blood in the joints. The usually short-lived benefit is probably based on this factor.

All these methods have only a temporary effect. We therefore sought for means of applying heat to the body which would be well tolerated by the patient and would produce sustained vasodilatation. The method we adopted is the application of a large electric blanket to the lower half of the body. The patient's feet, legs, and pelvis are well protected by sheets of cotton-wool bandaged on to the limbs and body. The electric blanket is then wrapped round the patient and kept in position by bandages. The blanket is left in position for prolonged periods—up to four weeks in some cases—and the patient only taken out of it for toilet purposes. The temperature between the cotton-wool and the blanket is between 108° and 110° F. (42.2° and 43.3° C.). This type of application of heat produces generalized vasodilatation with pronounced sweating. The resulting fluid and salt loss is made good by additional fluid and salt intake. A fluid intake and output chart is kept and a check made on the chloride excretion in the urine.

The patients tolerate this treatment well. We have treated eight patients so far, mostly cases suffering from advanced rheumatoid arthritis with severe joint deformities and marked limitation of movement. In every case the improvement was marked. The range of movement is increased, the swellings subside to a large extent, and the stiffness and pain also improve considerably. Three women, whose hands had been fixed for five years, after three weeks' treatment were able to knit again. Since the patients so far treated have all been advanced cases, a complete cure could hardly be expected. Although improvement appears to have been maintained it is impossible to say at this stage whether further relapses may occur, and it is therefore suggested that this method is tried out at a special centre on a number of patients who could be followed up carefully. We have no doubt that this treatment is more promising than other measures which are at present available. An additional advantage is that this treatment can be given to the patient in his home under the supervision of his own doctor.

We feel that the electric-blanket treatment should be given a wider trial and be used experimentally in conjunction with other methods at our disposal for increasing the blood supply to the diseased joints—for instance, plasma and blood transfusions, nicotinic acid infusions, the administration of tetraethylammonium bromide, sympathetic block by injecting the sympathetic ganglia, and gold or vaccine therapy.

We have approached the makers of the electric blanket to make us special trousers, which include the feet, out of the material, since such an appliance could more easily be kept in position and also allow for nursing purposes. The electric-blanket method of producing vasodilatation may be also useful in other conditions in which a constant increase in the blood flow to certain areas is beneficial.—We are, etc.,

London, E.11. ERIC FRANKEL.
D. LANG STEVENSON.

Vaccine Treatment of Rheumatoid Arthritis

SIR,—My old chief, Sir James Kingston Fowler, used to say that every new remedy of value is recognized as such by the profession within six months of its introduction. One has only to think of antidiphtheritic serum, salicylates for rheumatic fever, salvarsan, insulin, liver therapy, the sulphonamides, penicillin, radiotherapy, and E.C.T. to realize how very true this aphorism has proved itself to be.

But what about treatment with vaccines? This was first suggested, I think by Sir Almroth Wright, about forty years ago. It was used for diseases of infective origin—furunculosis, typhoid fever, *Bact. coli* infections of the urinary tract, and (as tuberculin) for tuberculosis. In each of these success should have been certain, for the vaccine was specific, but it had to be confessed that in each case the treatment was useless, if not indeed harmful.

In rheumatoid arthritis, however, most astonishingly, vaccines are still employed. Here is a disease, or group of diseases perhaps, of unknown aetiology which, upon a hypothesis unsupported by evidence, is being treated with complex chemical bodies whose action is not known and which have never been proved to be of more value than boiled tap water. After years of consistent failure and disappointment many hours of time and hundreds of pounds are still being wasted every year upon their preparation and administration. Perhaps even more significant is that the ideas underlying their use obstruct the introduction of new conceptions.—I am, etc.,

Beckenham, Kent. W. MAXWELL PENNY.

Perforation of Gastric Carcinoma

SIR,—Mr. Louis A. Ives's edifying communication (April 30, p. 758) touched on an exciting topic, but may give a rather pessimistic impression to young surgeons.

On May 5, 1938, I operated on a man, aged 55, for perforation. It came "like a bolt from the blue" when he, a publican, was seized with agony while serving in the bar, and called his doctor, who rushed him to the nursing-home. To my surprise a mid-lesser-curve ulcer, obviously cancerous, was found with a large hole in it. Partial gastrectomy was undertaken forthwith. Smooth healing followed. Biopsy by Dr. A. D. Fraser confirmed carcinoma.

This may seem bold surgery, but the patient was seen on April 12, 1949, by his doctor and found perfectly well—11 years later. I am only sure of three other patients of mine with gastric cancers (non-perforated) surviving over 10 years after operation.—I am, etc.,

Bristol. A. WILFRID ADAMS.

SIR,—Perforation is not a common complication of carcinoma of the stomach. Mr. Louis A. Ives's case (April 30, p. 758) emphasizes the need to be on the look-out for the condition in apparently straightforward perforations.

A similar case was recently admitted to Lymington Hospital. The patient, a man aged 54, was admitted on April 26, 1947, with a typical story of a perforated peptic ulcer of four hours' duration. He gave a history of many years' dyspepsia, for which he sometimes took alkaline powders, but he ate a fairly full diet. He had never previously been in hospital. At operation a perforation ¼ in. (0.6 cm.) in diameter was found in the pyloric antrum. This was closed with a plug of omentum. The ulcer had a wide proliferating margin which could be felt through the stomach wall. It was considered to be malignant, but a gland removed for biopsy showed no malignant invasion. Convalescence was uneventful.

In view of the operation findings, gastrectomy was performed on May 20, 1947, and microscopy of the ulcer confirmed the diagnosis—"extensive adeno-carcinoma and simplex carcinoma." He made a good recovery from the operation and was discharged from the hospital on June 14, 1947. When seen later in the year he was free from symptoms and back at work as a chauffeur, and he ultimately left the district. However, in April, 1948, I heard from his doctor in Northampton that he had had a recurrence and died shortly afterwards.

The interval of three weeks between the operations is convenient, as the patient has time to get over the shock of his perforation but the growth has not long to extend; nor is there time for the gastrectomy to be complicated by well-established adhesions.—I am, etc.,

Lymington, Hants. GEOFFREY ST. J. HALLETT.

The Treatment of Tetanus

SIR,—I would like to question the remarks of Drs. M. H. Armstrong Davison and A. B. Ward and Professor E. A. Pask (April 9, p. 616) concerning the value of penicillin in tetanus. It would seem logical that if the toxin elaborated by *Cl. tetani* can reach the blood stream, then penicillin can diffuse to the responsible bacilli. If the latter were *completely* shut off from the blood stream there should be no clinical problem. It would be sounder to argue that it is unlikely that further toxin, formed after the massive intravenous injection of antiserum, would reach the central nervous system unneutralized. While admitting this argument, I still believe that heavy dosage with penicillin is indicated as an adjunct to the other treatment in order to suppress the responsible organisms, not merely as a prophylactic against respiratory infection.

As far as treatment with curare is concerned, I too have encountered the same respiratory embarrassment, and it would seem that "myanesin" is the present drug of choice. In a case currently under treatment with curare (myanesin not available) the patient was much distressed initially by saliva and mucus in mouth and throat—so much so, in conjunction with the respiratory difficulties, that the question of tracheotomy was seriously considered. At that time I was giving *d*-tubocurarine by intermittent injection into the tubing of an intravenous drip, but in view of the mucus production it was thought wiser to restrict fluids. I have since been injecting the curare intermittently through a short lumbar-puncture needle, with stylet, left in the vein. This does not interfere with the patient's movements and requires little attention. While not an ideal aseptic procedure, it spares the patient from repeated needling and ensures the instant availability of a vein.—I am, etc.,

Victoria, British Columbia. JAMES FIDDESS.

Physiology of the Orgasm

SIR,—I am obliged to Dr. P. D. Eeman for his letter (April 2, p. 593) drawing attention to my Reichian assessment of the physiology of the orgasm as published in my book *Clinical Psychology*, though I think it would have been more polite as well as more accurate to call my remarks "incomplete" rather than "incorrect."

Dr. Eeman's quotation is also naturally incomplete. In the following paragraph (p. 95) I say, ". . . It seems from this patient's experience that an anxiety discharge can actually produce relief of tension comparable to that of an orgastic discharge. Perhaps this discovery is not so strange when we reflect that many a woman speaks of a 'good cry' as a relief for her pent-up emotions." Surely this is at least indicative that I consider that the orgasm may be regarded as "a brief period of acute sympatheticotonia occurring at the end of a period of parasympathetic predominance," and that my view is therefore not contrary to that of "Kuntz, White, and Smithwick."

Although my book is in no way devoted to the physiology of the orgasm I still think that it is impossible to give too much attention to the details of this much neglected psychophysical phenomenon. The stress laid on abreaction by every form of psychiatric treatment, mental and physical, should remind us that there is a perfectly normal form of abreaction provided by Nature for the maintenance of optimum intrapsychic tension.—I am, etc.,

London, W.1. G. CHARLES BERG.

B.C.G.

SIR,—Dr. W. Norman Taylor in his letter about B.C.G. (April 30, p. 778) is rightly anxious for facts about the efficacy of vaccination; Professor W. H. Tytler's recent article[1] and the "Memorandum on B.C.G." produced by a joint committee of the Tuberculosis Association and the Joint Tuberculosis Council (1946, London) both give excellent summaries of the evidence. He is also afraid that we may "get carried away in our enthusiasm for spending large sums on B.C.G. vaccine." In a country that has adopted a waiting policy for 25 years there is little danger of this.

But it is less clear why he thinks that we are "playing with fire" until the efficacy of the vaccine has been proved, or that experiments to test its efficacy should be conducted "with full realization of the risks involved"; these are questions of safety, not efficacy. With the global figure of vaccinated standing at ten million (excluding the figures from Japan),[2] the safety of the vaccine is no longer in question.—I am, etc.,

Henley-on-Thames, Oxon. K. NEVILLE IRVINE.

REFERENCES

1 *Medical Annual*, 1948, Bristol, p. 32.
2 Rosenthal, S. R., *Amer. Practit., Phila.*, 1948, **2**, 462.

SIR,—Dr. W. Norman Taylor (April 30, p. 778) asks what are the facts about B.C.G. Until we have some really convincing proofs, he says, let us remember that we are playing with fire. Dr. Taylor must be familiar with the investigation by Hyge, quoted by Wallgren,[1] of an epidemic of tuberculosis in a girls' school due to exposure to an infected teacher. Of

105 pupils tuberculin-positive before exposure, two fell ill; of 106 vaccinated with B.C.G., two fell ill; and of 94 tuberculin-negative, 41 fell ill—morbidity rates of 1.9%, 1.9%, and 43.6% respectively. Is this not proof?

He speaks of playing with fire. Malmros[2] states that, using Wallgren's method of vaccination, small abscesses occur in 7.8% of cases and large abscesses in 0.8%. Is this playing with fire?

There seems no reason why tuberculosis could not be wiped out in civilized countries, and it is good news that experiments with B.C.G. are to be carried out here, though it is difficult to understand the necessity for these. The time for experimentation was surely 20 years ago, and the grudging attitude adopted in this country towards B.C.G. can only be considered due to its having been discovered elsewhere, or to inability of the medical profession in this country to appreciate a conception that depends on prevention rather than on treatment.—I am, etc.,

Tavistock, Devon. JOHN SLEIGH.

REFERENCES

1 *British Medical Journal*, 1948, 1, 1126.
2 Ibid., 1948, 1, 1129.

Treatment of Varicose Veins

SIR,—I must protest, with due respect to Mr. R. Rowden Foote (April 9, p. 635), that ulcer of leg cannot really be cited as one affliction harsh enough to warrant certain measures in treating varicose veins, for any relationship that may exist between ulcer and varicose vein has yet to be demonstrated. It is true the notion of varicose ulcer is of hoary antiquity (Mr. Foote will perhaps have looked into the temple papyrus, 1200 B.C.); nevertheless it is but an easy-going repetition founded on no more than too hasty observation, and the notion dodges our incomplete knowledge of the aetiology of ulcers of the leg.

A proper follow-up after treatment and proper control comparisons of thus treated and thus untreated cases of leg ulcer accompanied by varicose vein, at all ages, will show that destruction of the varicose vein, by whatever method, has had no effect on the healing or extension of the ulcer nor on its recurrence. Of course, waiting—over some years perhaps—for this evidence, rendered reliable because cross-examined by time, follow-up, and controls, is tedious. But after all there are the immediate commonplace facts: that the great majority of patients with varicose veins, at all ages, have and have had no leg ulcers, while the great majority of patients with leg ulcer, at all ages, have and have had no varicose veins; that in its clinical features, under all conditions, there is no discernible difference between ulcer with, and ulcer without, varicose veins; that Providence affords us often enough the spectacle in one human of chronic recurrent ulcer in one leg, and the only varicose vein (long-standing and down to the malleolus) in the other, and otherwise healthy, leg; that the ulcer, for its part, has no effect on its companion varicose vein, however close the proximity. I note that Mr. Foote's tale of dreadful ulcers in the varicose clinic could not be enlivened by a story of thrombophlebitis of a varicose vein set up by its septic ulcer, nor of a sloughing ulcer eroding into its varicose vein. Why not?

I recorded my observations on the danger of a chain-reaction-like necrosing, not sclerosing, thrombophlebitis. Mr. Foote would avoid this by diminishing his dose of sclerosant, while risking starting it by his proper prior scarification of the venous intima.—I am, etc.,

London, W.1. H. M. HANSCHELL.

Pain in Childbirth

SIR,—While fully agreeing with what Dr. Grantly Dick Read says (April 16, p. 651) about fear underlying most of the discomforts of childbirth, I would like to point out how much needless pain is caused by our neglect of the mechanical factors involved in the process. It seems very strange that Newton and his apple and his deductions therefrom are disregarded in the obstetric world of to-day. The chief cause of unbearable pain connected with a *normal* birth depends so much on this neglect of his teaching—that bodies fall to the earth by their own weight.

If Newton had laid his tree on the ground how could his apple fall? The child's weight (7 lb. odd) accomplishes the delivery and numbs the parts as it is born by the uniform pressure it exerts on the nerve endings in the stretched and distended perineum, but is it allowed to do so? No. The mother is laid upon her side and now has to supply the seven pounds of propelling force from her own muscles. Furthermore, because she is laid on one side, the left, it is thus put out of action, is kept rigid, becomes congested, and easily torn. I think it will be found that nearly all tears whether of cervix or of perineum are on the left.

Like using a bedpan, the act of excretion becomes difficult when lying down. Normal childbirth became both difficult and dangerous when the lying-down position became general; it is so contrary to Nature. During the war, in using the natural position for childbirth—squatting and kneeling—the members of the antenatal class at Paddington were offered the choice of having an anaesthetic or of seeing their baby born. All chose to see the baby born—and did not regret it. Several of the mothers, all primigravidae (one over 40), volunteered the statement that as the foetal head was passing the vulva they felt no pain down there, but only suffered pain from the contractions in the abdomen.

When the child is being born with the mother kneeling or squatting the pelvis is delicately balanced upon the heads of the femora and can move backwards and forwards on the hip joints, thus keeping the plane through which the foetal head is passing parallel to the ground and ensuring equal pressure on all parts of the muscular opening. At the same time the sides of the pelvis lift (just as the ribs lift in inspiration), the pubic arch widens, and consequently the outlet of the pelvis broadens. Simultaneously the perineum is stretched transversely, and as the mother rounds her back for the expulsion it is relaxed antero-posteriorly as the tip of the coccyx comes forward. When all is thus ready, the weight of the child brings it through the birth canal quickly and with a minimum of suffering to the mother.

A class in which birth is prepared for by exercise and is looked upon as a test of nerve and courage never fails to find recruits who ask for no anaesthetic but long to *see* their baby born.—I am, etc.,

London, N.W.11. KATHLEEN VAUGHAN.

Curare-modified E.C.T.

SIR,—The technique of curarization propounded by Drs. Peter D. W. Shepherd and David C. Watt (April 30, p. 752) must in the following particulars be called into serious question.

(1) Their recommended initial dosage of 2.5 mg. per stone (6.35 kg.) for females and 3 mg. per stone for males is dangerously high. They have never, they say, seen a case unduly sensitive to curare. If they had, their technique might well have led to consequences more severe than the prolonged apnoea of a number of their patients, as a fairly recent article in the *Journal* (April 24, 1948, p. 784) by Gray and Halton portends. These authors not only counsel a maximum initial dose of *d*-tubocurarine chloride of 15 mg., but advise also a trial dose of not more than 5 mg. followed by a watching period of two minutes. They cite a fatal case of respiratory arrest after the administration of 15 mg. of *d*-tubocurarine chloride and 0.5 g. of thiopentone, and a case showing apnoea with diminishing doses of *d*-tubocurarine chloride—indeed, with as little as 2 mg. at the third induction. Yet Drs. Shepherd and Watt would submit a man of 10 stones (63.5 kg.) to an initial curarization of 30 mg., and a 10-stone woman to one of 25 mg.

At the Warneford and Park Hospitals my technique at first curarization is to give 5 mg. of *d*-tubocurarine chloride at two-minute intervals until a total quantity has been administered sufficient to prevent any movement of the upper arms and forearms except forearm flexion. Adequate muscular relaxation without severe respiratory depression results. The full dose thus calculated can be rapidly administered at reinductions without harm. Moreover, this technique has failed to demonstrate any exact correlation between the patient's weight and the needed dose of curare. Thus a male patient weighing 9½ stones (60.4 kg.) required a maximum dose of 15 mg. of *d*-tubocurarine chloride for excellent relaxation; another of 15 stones (95.15 kg.) never needed more than 25 mg. Drs. Shepherd and Watt would presumably have almost doubled these doses at the first induction. On the other hand, a frail man weighing 7½ stones (47.6 kg.) required 35-40 mg., and Case 43 in Drs. Shepherd and Watt's series showed an even greater tolerance.

It is therefore submitted that it is dangerous to calculate the initial dose of *d*-tubocurarine chloride by weight alone, particularly at so high a value as that employed by Drs. Shepherd and Watt. The above-described technique of small doses slowly administered obviates all danger of fatal drug sensitivity.

(2) I can see no rationale for the technique described by Drs. Shepherd and Watt of mixing *d*-tubocurarine chloride with thiopentone and atropine, if I have understood them correctly. In the first place it alters the amount of fluid in which each drug is dissolved, complicating calculation. Secondly, it prevents variation of one drug without a proportionate variation in the others. Yet it is as important to reach by calculation the correct end-point with thiopentone as it is with curare.

My technique with thiopentone is to give the drug at a steady rate of about 0.1 g. every five seconds, making the patient count rapidly, and to stop the injection as soon as the patient's voice starts to tail off. In this simple way unconsciousness with the minimal amount of thiopentone is achieved. To do this effectively it is essential for the thiopentone to be administered separately from the curare, although through a single venepuncture. For in-patient therapy it has been found most simple to give a standard dose of atropine, 1/75 gr. (0.9 mg.), subcutaneously 1½ hours before treatment, as is done pre-operatively.

(3) Drs. Shepherd and Watt have had little use for neostigmine, while, it appears, tolerating apnoea in their patients of up to 45 minutes. Patients begin to come round from the post-convulsive coma in 5–10 minutes. There can surely be no justification for submitting a patient to the distress of waking up weak and apnoeic, and one's staff to the needless imposition of continuing artificial respiration for up to 45 minutes, when a routine intravenous dose of "prostigmin" (1¼–2 mg.), given immediately upon cessation of the convulsion, so rapidly and effectively abolishes the curare-effect that artificial respiration, in my experience, can invariably be discontinued directly after the injection, and no patient wakes conscious of having been curarized.

—I am, etc.,

Oxford. S. J. G. SPENCER.

Transfusion Compatibility Tests

SIR,—The commonly employed direct compatibility test, using the patient's serum and a saline suspension of donor's cells, is unsatisfactory and dangerous. The transfusion reaction described by Drs. A. C. Buchan and John Wallace (April 16, p. 660) illustrates the danger attending its use, and emphasizes the absolute necessity of using a compatibility test that will detect incompatibilities due to Rh and other irregular agglutinins, both of the saline- and albumin-agglutinating types.

The application of the indirect Coombs test would probably provide the greatest safety, for it is apparently the only test that detects the rare cryptagglutinoids, but it seems too laborious for routine use and too involved for many who might have to perform urgent cross-matching. In this laboratory saline suspensions are never used, all compatibility tests being performed with albumin suspensions by the open-slide method of Diamond and Ableson. For the past six months we have simplified our arrangements for this test, so that it can be easily performed by anyone wishing to cross-match in the absence of laboratory staff. Our procedure is as follows :

Blood in the citrated pilot tubes, supplied attached to the bottle, is allowed to settle, and two drops of the sedimented cells are transferred aseptically to sterile plugged tubes (2 × ¼ in.; 5 × 0.9 cm.) containing two drops of 30% bovine albumin; care is taken not to include any supernatant fluid. These small tubes are fixed to the pilot tubes with adhesive tape. All blood is treated in this way before being made available in the "bank."

Compatibility is tested for by mixing equal volumes of this albumin suspension and the patient's serum or plasma on a slide and reading after 15 minutes in a 37° C. incubator or over a lamp—precautions being taken against drying. Advantages are that the suspension is ready for immediate use and no additional reagents are needed.

Specific agglutinability is retained for at least 10 days; we have made no tests over a longer period. Owing to the optical properties of albumin the cells in the tubes may appear haemolysed although they are well preserved.

Dangerous reactions are likely only in the presence of preformed agglutinins. The use of a satisfactory compatibility test is therefore a more important safeguard against *dangerous* reactions than is routine Rh testing with a limited range of sera, for only in this way can the reactions due to the rarer Rh antibodies and other irregular agglutinins be avoided. A test on the above lines can provide a considerable measure of safety : it remains only to convince all those prescribing blood of the inescapable obligation of employing a compatibility test.—We are, etc.,

Pathological Department, North Staffs Royal Infirmary, Stoke-on-Trent. B. GODWIN. A. J. MCCALL.

Routine Medical Examinations

SIR,—A conference was recently held under the auspices of the British Council for Rehabilitation on "The Problem of the Cardiac Patient in Industry." One of the principal speakers inferred that the routine medical examination of individuals in industry had very little value except for the supervision of special cases under specialist direction. He spoke, perhaps unintentionally, with something of the disdain of a certain type of specialist for anyone not equipped with specialist training and a battery of scientific apparatus. The specialist has been described as one who knows more and more about less and less, and certainly many specialists know far too little about the indivisible problem of health as opposed to the specific classification of disease. The specialist too often is concerned primarily with cure and salvage, after neatly fixing a label.

The doctor in industry, as team-mate of the general practitioner, is concerned with very different problems—how to help people to keep out of range of the specialists by promoting health and preventing disease. The value of the routine medical examination is not primarily to detect disease. The good doctor has to develop a fine clinical sense in conjunction with knowledge of men and a sound training in examination and the taking of a full history. This enables him to select a certain proportion of cases for reference to their G.P., and a smaller number of these are sent for detailed investigation by the specialist. Often the cases are sent to him not so much for his advice as for the special investigation by apparatus which the ordinary doctor has not at his disposal. Such cases would otherwise come forward at a much later stage in their disease.

This is only a very small proportion of the cases seen by the industrial doctor. Primarily, I think, the value of routine examinations lies in reassurance, guidance, and general health education. In every consultation the doctor learns something of human nature, and may have an opportunity of using his knowledge for the aid of his patient.

We hear much to-day of the stress diseases which cause such vast national loss. The industrial doctor is in the front line in the study and prevention of these diseases, which owe so much to bad mental hygiene and disharmony of interpersonal relations. In this capacity he is a catalyst in industrial affairs. Beyond this, the routine examination gives great opportunities for the study of the natural history of disease and the practice of social medicine. If improvements are to be made much will depend upon the quality and the philosophy of those who guide the development of students into doctors. In this role, is it too much to say that the specialist has perhaps his greatest opportunity, for good or ill, as the teacher and ultimately the support of the front-line doctors ?—I am, etc.,

Farnham Royal, Bucks. M. E. M. HERFORD.

POINTS FROM LETTERS

Diet in Disseminated Sclerosis

Dr. C. D. Ross (Stafford) writes: The study of the geographical distribution of disease has brought to light many important facts in its aetiology. It has been pointed out by Snapper (*Chinese Lessons to Western Medicine*, 1941, New York) that arteriosclerosis occurs rarely in Northern China, in spite of the fact that diabetes is common, He suggests the fundamental differences in dietaries to be the underlying cause of this phenomenon. It is known that the Chinese diet contains only small amounts of cholesterol but considerable quantities of unsaturated fatty acids, especially linoleic and linolenic acids. From the available literature it is found that disseminated sclerosis is rare or absent in China, where the staple diet is rice. It would appear that disseminated sclerosis, as well as arteriosclerosis, is connected in some way or other with diet and metabolism. Would it be wishful thinking to assume that in a case of disseminated sclerosis the substitution of an average Chinese diet would prevent the further ravages of the disease ?

Diathermy Prong Forceps

Mr. A. WILFRID ADAMS (Bristol) writes: I am grateful to Mr. David Aiken (April 30, p. 780) for giving his further experiences with diathermy devices for haemostasis. They will help in emergency, but do not allow me to dispense with a pattern specially designed and correspondingly efficient. The prong forceps never fails me, and is a well-warranted adjunct which is in incessant use when operating.

Obituary

G. SECCOMBE HETT, M.B., F.R.C.S.

Mr. Geoffrey Seccombe Hett died suddenly in London on May 3, at the age of 70. He received his medical education at University College Hospital, where he qualified in 1903. He graduated M.B. a year later and went on to take the F.R.C.S. in 1908. Before finally settling down to consulting practice as an ear, nose, and throat specialist, Hett undertook postgraduate study in this specialty in several European centres, including Vienna and Freiburg. He was appointed assistant surgeon for diseases of the ear, nose, and throat at University College Hospital in 1912 under the late Mr. Herbert Tilley. He was also at different times on the staff of the Throat Hospital, Golden Square, the Royal London Ophthalmic Hospital, Mount Vernon Hospital, the Cassell Hospital for Nervous Diseases, the Ear, Nose, and Throat Hospital at Eastbourne, and the Cottage Hospital, Cranleigh. During the first world war Hett served in the R.A.M.C. with the rank of major, and was at one time officer-in-charge of the Middleton Park Convalescent Hospital for Head Injuries. He became interested in the plastic repair of facial, and especially nasal, injuries, and was for some time attached to the facial injuries centre at Sidcup. Sir Harold Gillies, with whom he worked there, said that his work on nasal injuries was outstanding.

Hett soon achieved a large consulting practice, and attended members of the Royal Family on more than one occasion. He was a fine operator, a stimulating teacher, and contributed to the literature many valuable studies, the most outstanding of which were concerned with the comparative anatomy of the tonsils and with injuries and diseases of the nose and accessory sinuses. He had wide interests outside Medicine, being particularly devoted to exploration and natural history. He was a Fellow of the Royal Geographical Society and of the Zoological Society. He was recognized as an authority on bats, and had carried out an extensive investigation into the problem of basking sharks off the Scottish coast. Hett was also a keen fisherman and a practised shot. He was a kind and courteous chief, a good host, and an entertaining talker on almost any subject. All his patients had a great affection for him because of his charm of manner and gentleness, and there are many who have received kindnesses from him who will mourn his loss. He leaves a son and a daughter.—T.C.

LUDWIG HALBERSTAEDTER, M.D.

Dr. Ludwig Halberstaedter, one of the early pioneers in the field of experimental radiology, died in New York on April 20 at the age of 72. Halberstaedter was born in Beuthen, Silesia, in 1876, and he studied medicine at Breslau University. His research career began with an investigation of the action of x rays on the ovary, the results of which he published in 1905. Bergonnié and Trebondeau published their work on the effects of radiation on the reproductive system later in the same year. In 1907 Halberstaedter went on a research expedition to Batavia and with von Prowaczek published a description of the inclusion bodies in trachoma (Halberstaedter–Prowaczek bodies). On his return to Europe he specialized in dermatology, taking a particular interest in radiation as a therapeutic agent. After the first world war he became director of the radiotherapy section of the Berlin Cancer Institute, and in this capacity he attended as an official delegate the First International Congress of Radiology, which was held in London in 1925. At this time his work was mainly concerned with the treatment of malignant disease by thorium (as a substitute for radium and radon), and his work in this field was outstanding. He was also interested in the treatment of carcinoma of the larynx by a fenestration method which attracted some attention. His experimental work included studies on the radiation of small organisms such as algae and trypanosomes.

As early as 1932 Halberstaedter began preliminary work on the biological action of million-volt *x* rays, and he also used the cathode-ray tube as a source of radiation. He left Germany in 1933 and took charge of the radiotherapy department of the Hadassah Hospital in Jerusalem, which developed into the largest radiotherapy centre in that part of the world. He continued his work at the cancer research laboratories of the Hebrew University and published many papers from this department. His interest now lay in irradiation of tissue cultures and other relatively simple biological materials, such as blood corpuscles.

His department was destroyed in 1948, shortly after his colleague and collaborator, Doljanski, lost his life, and these calamities affected his general health. Just when he was about to retire he died suddenly while on a visit to the United States. Altogether he published over a hundred papers in the period from 1903 to 1947. He was fond of teaching, and his students benefited from his wide experience. He found recreation in photography and music, and while he loved serious conversation he had a great sense of fun and a gift of quick repartee which was the delight of his circle of close friends. He is survived by his wife, a daughter, and two sons, one of whom is at St. Mary's Hospital, London.

Dr. FREDERICK GORDON CAWSTON died on March 19 at Durban, where he had practised for many years. He was one of the pioneer workers in Natal on the pathology, prevention, and treatment of bilharzia. There was hardly a river in Natal which he had not patiently and laboriously investigated. Cawston was born in Kent, and was a student at Caius College, Cambridge, and St. Thomas's Hospital. He graduated M.B., B.Ch. in 1910, proceeding M.D. in 1917. He settled in South Africa at the age of 26, and was a resident at Grey's Hospital, Pietermaritzburg, subsequently practising in Greytown, in Krugersdorp, where he was medical officer of health, and in Durban. During the first world war he was a captain in the S.A.M.C. Apart from his scientific work, on which he published many articles, Cawston was a fine organist and piano player, and a very devout Christian. For twenty years he assisted at the services at the Durban gaol, and he gave a great deal of his time to lecturing to various youth organizations and the Y.M.C.A. He was also a member of the Juvenile Affairs Board at Durban. When still a young man Cawston lost the sight of one eye following an accident, and he had badly impaired hearing, so that for the rest of his life he fought—and fought bravely and cheerfully—an uphill fight against these handicaps, which never checked his enthusiasm for research. He leaves a widow, who was founder, and is still president, of the Natal Bantu Blind Society.

Dr. DUNCAN MATHESON MACKAY died at Campbeltown, Argyllshire, on April 12 at the age of 79. He was born in Hull, and graduated M.B., C.M. at Edinburgh University in 1895, proceeding M.D. in 1903. He had also studied at the Middlesex Hospital, and later in Vienna and Berlin. Returning to Hull, he specialized in diseases of the eye, ear, nose, and throat, but subsequently restricted his work to ophthalmology. He was on the honorary staff of Hull Royal Infirmary from 1909 to 1929, and in the absence of one of his colleagues he was recalled to full and arduous duty from 1939 to 1945. With his customary fortitude he went on with his work in the centre of the city of Hull undeterred by enemy air attack, and he had to endure the loss of his only son in the North African campaign and the complete destruction of his home, equipment, and personal property. Dr. Mackay went back to Scotland in 1945, and he continued until recently to practise ophthalmology for the benefit of those for whom the journey to Glasgow might be difficult or inconvenient. He was a devout Presbyterian, taking a deep and generous interest in the affairs of his church. His considerable influence among his colleagues in Hull derived from their respect for his loyalty and high principles. Dr. Mackay was elected chairman of the East Yorkshire Division of the B.M.A. in 1927–8, and was president of the East Yorkshire and North Lincolnshire Branch in 1931–2. Subsequently, until he left the district, he was elected as often as he was eligible to the Branch Council, where his sincerity and honesty were of special value in the consideration of ethical and other problems. Assiduous in his attendance at all medical meetings, Dr. Mackay took an active interest in the purchase of permanent premises by the Hull Medical Society to serve as a centre of medical life in the district and as a regular meeting-place for the discussion of professional matters. He represented the B.M.A. on the Council of Hull University College, and instituted the fund from which a B.M.A. prize is offered to medical students of that college. As local charities secretary of the Association and local secretary of other medical charities and benevolent associations he set a fine example. These engagements in addition to his busy professional life left little time for his literary,

historical, and antiquarian interests. His work for the B.M.A. is permanently commemorated by the gold and enamel badge of the Association which he presented and which is part of the official insignia of the president of the East Yorkshire Branch. Dr. Mackay regularly attended ophthalmic meetings and congresses, particularly those of the North of England Ophthalmological Society, of which he was president in 1933. If he had any ambition it was for a lifetime of service to humanity, and this he can truly be said to have achieved. He will be especially remembered for his modest demeanour, for the courtesy he extended to all, and for his encouragement of younger men. —D. S. S.

Dr. Christopher Thackray Parsons, of Havant, Hants, died suddenly as a result of an accident at Cheltenham at the age of 78 on April 22. As a student he won a scholarship at St. Mary's Hospital and qualified L.S.A. in 1892. After holding a number of resident appointments he graduated M.B. in 1894, with honours in physiology and materia medica, and proceeded M.D. in 1895. Early in 1898 Dr. Parsons served in Bombay on special plague duty and on his return took up general practice for a few months. Later in the same year, however, he was appointed medical superintendent of Fulham Infirmary, where he remained until his retirement in January, 1934. The infirmary had by then been taken over by the London County Council and renamed Fulham Hospital. Dr. Parsons was highly esteemed by all his staff, who came to regard him with real affection. During the 1914–18 war he served in the R.A.M.C. with the rank of lieutenant-colonel and was in command of the Fulham Military Hospital; later he commanded a field hospital in Mesopotamia and was awarded the O.B.E. He was honorary secretary of the Infirmary Medical Superintendents' Society in 1908 and 1909 and president in 1912 and 1913. He was examiner in medicine to the General Nursing Council from 1934 to 1945 and the author of several reports on Poor Law relief and on workhouses and similar institutions. Dr. Parsons became a freeman of the Worshipful Society of Apothecaries, by redemption, in 1907, and was Master for a year from August, 1946. He was very proud of this honour and took the greatest interest in the traditional ceremonies which take place in the historic hall of this medical guild. Parsons was a man of small but dignified stature, of original thought always fearlessly expressed, kindly, and with an almost puckish sense of humour. He was endowed with a philosophical mind and unquenchable optimism. Widely travelled, he had a working knowledge of more than one Continental language, was well versed in the classics, and was informed on archaeology and painting. In addition to these accomplishments he was a man of affairs and a most able chairman. He was perhaps at his best as an after-dinner speaker, when his colourful phraseology and apt quotations were listened to with careful attention by all who had the privilege to hear him. He will be missed by many, and the sympathy of his friends will go out to his widow.

A memorial service for the late Dr. A. E. Barclay has been arranged by the British Institute of Radiology at St. Peter's Church, Vere Street, London, W.1, on Friday, May 20, at 11 a.m. Members of the institute, of other radiological bodies, and all who desire to do so are invited to attend. It was Dr. Barclay's wish that mourning should not be worn.

Medico-Legal

NEGLIGENCE BY A SURGEON

Loss of a Little Finger

Mr. Justice Pritchard in the King's Bench Division on April 11 heard a case in which a 7-year-old girl, Jennifer Leggatt, brought an action against Mr. Kenneth Aird Ross.

At the age of 18 months the child sustained a burn on the right little finger which left a scar on the proximal phalanx and part of the middle phalanx. It seemed likely to produce a contracture, and on Dec. 17, 1946, Mr. Ross operated at the Hospital for Sick Children, Great Ormond Street. At some time after that date the finger became gangrenous, and finally the distal phalanx and part of the middle phalanx had to be amputated on March 14, 1947. The child, through her father, took action to recover damages in respect of the loss of part of the finger.

Judgment

In his summing up Mr. Justice Pritchard said that negligence was alleged on six points: (1) that Mr. Ross failed to stop the bleeding before sewing up the operation wound; (2) that he sewed it up too tightly; and (3) that he failed to arrange for a sling to be worn by the infant after the operation. In his view there was no substance in these three allegations. He went on to consider the allegations (4) that after the operation Mr. Ross bandaged the finger too tightly; (5) that on Dec. 23 he saw the finger, which was then swollen and painful, and took no steps to remedy the excessive tightness of the bandage or of the stitches; and (6) that on that same day he sent the infant away until Dec. 31, when her condition was such that he should have examined her at frequent intervals during that week.

After reviewing the conflict of evidence on a number of points the judge found the following facts. The finger was bandaged too tightly; the strapping was applied not merely to keep the gauze dressing in place but tightly enough to act as a splint. On Dec. 23 the bandage was cut open to reveal the site of operation, but it was not cut right up to the top of the finger so as to allow examination of the proximal phalanx. On Dec. 31 the finger showed dry gangrene. Since the child had pain from Dec. 17 to Dec. 23, 1946, and had no pain thereafter, the gangrene must have set in between the date of operation, Dec. 17, and Dec. 23.

There was some dispute between Dr. Courtenay Bell and Mr. Ralph Marnham for the plaintiff and Mr. Denis Browne, Mr. Dickson Wright, and Mr. Joseph Fathi for the defendants. It was suggested by the defendants that the bandage could not have caused the dry gangrene and that it might have been due to an arterial spasm in one of the small arteries of the finger. The judge preferred the evidence of Mr. Marnham and Dr. Courtenay Bell, and held that the gangrene was caused by a tight bandage. In putting that bandage on as he did, Mr. Ross was negligent, and on Dec. 23 his examination of the girl was not thorough and was a negligent examination. Mr. Justice Pritchard went on to say:

"Nobody likes saying of a surgeon that he has been negligent. I am quite sure that this case has been a matter of great sorrow and great anxiety to Mr. Ross. I hope that he will find at any rate some comfort in this expression of my view, that there are very few professional men—and I do not exclude lawyers when I say that—who have not at some time or other during the course of the practice of their profession been negligent. It happens I am sure many, many times. It does not always happen that an act of negligence committed in the bustle of a busy day results in an unfortunate chain of circumstances such as occurred in this case. I hope that Mr. Ross will go away from this Court not feeling that he is an isolated person because I have found that he is negligent, and imagine that I think he is unlike other people, because he is not. I hope he will go away, on the contrary, realizing what I really do think, which is that his negligence on these two particular days was something which might have been done by any surgeon without the unfortunate results which did occur in this case, and he has been unfortunate because those unfortunate results did occur."

He assessed the damages at £175, and gave judgment also for £8 14s. 11d. for the father, whose damages were not disputed. Mr. Felix Denny, instructed by Messrs. Milles Day and Co., appeared on behalf of the plaintiffs. Mr. Cecil R. Havers, K.C., and Mr. E. Garth Moore, instructed by Messrs. Hempsons, appeared for the defendants on behalf of the Medical Defence Union.

The International Hospital Federation is holding a congress in Holland on May 30–June 4. The Minister of Health does not consider that the expenses of members and officers of boards and committees attending the congress should be met from Exchequer funds, but he would have no objection to appropriate officers being granted special leave with pay to attend. Any regional board or board of governors that wishes to join the International Hospital Federation may pay the subscription from their Exchequer funds. Any association of boards or of management committees which may be formed would also be able to join the Federation, but individual hospital management committees should not join or subscribe from Exchequer funds. Details of the activities of the Federation and of the congress can be obtained from Captain J. E. Stone, honorary secretary and treasurer, King Edward's Hospital Fund for London, 10, Old Jewry, London, E.C.2.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

Frank George Young, D.Sc., F.R.S., has been elected to the Sir William Dunn Professorship of Biochemistry in the University, from Oct. 1.

UNIVERSITY OF LONDON

Dr. J. W. P. Harkness, Medical Adviser to the Comptroller for Development and Health in the West Indies, has been appointed Edith Clark Lecturer for 1950.

Professor J. M. Mackintosh has been appointed representative of the University on the Council of Management of Slough Industrial Health Service, Ltd.

Professor S. Nevin has resigned the post of Professor of Pathology of Mental Diseases at the Institute of Psychiatry, from Sept. 30.

The William Julius Mickle Fellowship for 1948–9 has been awarded to Dr. Francis Avery Jones, F.R.C.P. The Fellowship, which is of the value of approximately £250, is offered annually to the man or woman who, being resident in London and a graduate of the University, has in the opinion of the Senate done most to advance medical art or science within the preceding five years and has therein shown conspicuous merit.

UNIVERSITY OF MANCHESTER

The following candidates have satisfied the examiners at the examination indicated:

THIRD M.B., CH.B.—*Pharmacology, Pathology, and Bacteriology:* B. L. Alexander, W. de C. Baker, Constance M. Bevan, J. C. Canney, Barbara M. Caldwell, B. Didsbury, J. Ellis, M. Fox, P. Fulton, G. Garrett, T. V. A. Harry, B. Higgins, T. R. Hunter, A. Hyman, W. Kerns, P. B. Lees, P. F. Lister, G. W. H. Oldfield, M. L. Reynolds, Carolyn C. Rigby, D. S. Rosenberg, Lorna J. Shankland, D. M. Somerville, G. Sullivan, S. E. Sutton, Margaret R. Walley, G. R. Whittaker, B. A. Wolfenden, D. Wolman.

UNIVERSITY OF SHEFFIELD

The following candidates have been approved at the examination indicated:

FINAL M.B., CH.B.—*Parts II and III:* R. G. Ball, A. A. Belton, J. D. Bird, J. P. Caley, P. Cauthery, Barbara J. Green, Mary A. Le C. Hills, J. D. Howard, Nasi M. Hutchinson, J. C. Johnson, L. C. W. Kershaw, R. G. F. Lampart, J. P. Lee, Margaret B. Lees, S. C. L. Ramesar, K. E. Spittlehouse, Betty M. Wylie.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

At a meeting of the College held on May 3, with the President, Dr. W. D. D. Small, in the chair, the following were elected to the Fellowship: G. Ormiston (Southampton), R. Y. Keers (Tor-na-Dee), G. R. Griffith (Caernarvon).

Diplomas of Membership were conferred on W. M. Harrowes (Loanhead), J. C. Hogarth (Dartford, Kent), A. R. Piracha (Lahore, Pakistan), R. M. Hayes (Alberta, Canada), J. Pepys (Capetown), A. L. De P. Carnegie (Jamaica, B.W.I.), Ethel E. Robertson (Edinburgh), E. G. McIntosh (Edinburgh), H. M. Brown (Edinburgh), G. H. Murray (Liverpool), J. M. Smith (Alexandria), J. Rabkin (Capetown), J. H. Haldane (Dumfries), F. Stern (Natal), I. R. Wilson (Glasgow), I. Gordon (Port Elizabeth), H. T. G. Strawbridge (Portobello), G. H. M. Thornton (Edinburgh), D. G. Illingworth (Edinburgh), R. D. T. Cape (West Linton), R. P. A. Cumming (Elie), J. W. Gibb (Lockerbie), R. C. Nimmo-Smith (Edinburgh), S. Rae (Edinburgh), R. M. Jhala (Baroda, India), R. D. Rowe (Dunedin, New Zealand), W. R. St. Clair (Swansea).

At a meeting of the Royal College of Surgeons of Edinburgh held on May 3, with Mr. Frank E. Jardine, President, in the chair, the following candidates, having passed the requisite examinations, were admitted Fellows: J. A. MacLeod, H. G. A. Almond, J. W. Boland, A. C. Clark, M. E. A. El Kharadly, H. J. Fisher, H. H. Gilbert, H. A. Graham, H. Hazra, B. Joffe, L. A. Key, P. Kinnear, T. H. Lawton, J. C. Miller, I. P. Munro, A. S. Oscier, E. W. Parry, R. P. Schach, A. J. Sinclair, V. Tabone.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

At a meeting of the Royal Faculty of Physicians and Surgeons of Glasgow held on May 2, with Dr. W. R. Snodgrass, President, in the chair, J. F. Mair, M.B., and W. Roy, M.B., were admitted Fellows of the Faculty *qua* Physician.

The Services

Major E. L. O. Hood, and Captain G. D. Powell, R.A.M.C., have been mentioned in dispatches in recognition of gallant and distinguished services in Malaya during the period July 1, 1948, to Dec. 31, 1948.

Medical Notes in Parliament

NURSES BILL

In the House of Lords on May 3 Lord SHEPHERD moved the second reading of the Nurses Bill. The Bill was summarized in our issue of April 23 (p. 723).

Recalling the reports of committees which had considered the recruitment of nurses between the two world wars, Lord Shepherd said that the Horder Committee of the Royal College of Nursing had suggested that there should be a student nurse status and regional and local committees for carrying out the work of training. The Bill sought to bring into operation regional training committees. The Whitley Councils had greatly increased the allowances to be paid to nurses in training; but, despite all that had been done, the country still needed another 46,000 trained nurses, and of the 127,000 full-time nurses only 45,000 were fully trained.

The Working Party under the chairmanship of Sir Robert Wood had reported in 1947. Most of their proposals needed legislation which would ultimately come before Parliament, but the Government had put into operation some of their proposals. It was experimenting in the selection of student nurses and in the further training of registered nurses for higher positions. The Nuffield Hospital Provincial Trust was carrying on research, as recommended by the Working Party, to decide the kind of jobs that had to be performed in hospital and the staff required. Other important recommendations of the Working Party, however, would have to be dealt with by legislation.

The first feature of the Bill was the decision to increase the status and strength of the General Nursing Council and to make it more widely representative. The Government accepted the view that under present arrangements the training of nurses tended to be subordinated to the staffing of the hospitals, and also accepted the conclusion that so far as practicable training should be dealt with independently of hospital administration. The Bill left open the question of how far a student nurse could be given full student status, but created the conditions in which the answer to this question could be evolved by trial and experiment. It provided regional committees, independent of the hospital authorities, whose main duties would be to co-ordinate training arrangements. Membership of these nurse-training committees would be defined by the Minister, and these committees would advise hospital management committees, boards of governors of teaching hospitals, and any other authorities on schemes of training. The General Nursing Council would control the conditions of admission to the register, conduct examinations, and prescribe the grounds for removal from the register. It would be the duty of the Council to lay down in rules to be approved by Parliament the kind of training which would operate in general, but the Council would have authority to sanction experimental training schemes. Power was given to the General Nursing Council to register nurses from abroad who had undergone the appropriate training. That part of the register which concerned male nurses would be closed shortly after the Bill became law, and male nurses would be transferred to the general register. The Council was to be relieved of the obligation to publish the register, but they would not be prevented from doing so, and the register would be maintained in the office of the Council.

Lord LLEWELLIN welcomed the Bill. He said that previously the register of nurses had been published annually at a cost to the General Nursing Council of about £6,000 a year. He suggested that it should be obligatory to publish this register every five years, a year before the election to the Council took place. He inquired whether the Minister intended to appoint any doctors to the General Nursing Council. It was important that the liaison between doctors and nurses should be complete and that doctors should be able to give advice to the Council and have a say in training. The Working Party put the wastage of student nurses who did not finish the course at 35% in the old voluntary hospitals and 43% in the old municipal hospitals. They would retain more of these student nurses if imagination were shown in their training in hospitals and there was less drudgery. He was glad that mental nurses were to be given their own statutory committee and a place on the General Nursing Council. He suggested that the replacement of out-of-date mental institutions should receive a better place in the Government's programme of capital expenditure. The Working Party estimated that, while the percentage of the population which was mad was now 2.1, it might well increase to 4.1 over the next fifty years.

Medical Views

Lord AMULREE also welcomed the Bill. He said it seemed that medical practitioners were not represented on the General Nursing Council. There was a provision that two teachers should be appointed by the Ministry of Health. These teachers might be doctors but need not be. It would greatly strengthen the Council if there were medical representation. There still was a deficit of 50,000 nurses, although there were now 51,000 student nurses compared with 42,000 before the war. He was not sure whether the country could afford to take a greater number of well-trained and well-educated young women to care for the sick. The Council might given attention to the position of young girls who had a vocation for taking care of the sick but were not good at passing examinations. It was not necessary for all the junior nurses to know as much as the doctors did. It might be useful if there was a linking of management committees and boards of governors on the question of training.

Lord MORAN said the crux of the Bill was in the clauses which for the first time separated funds for the training of nurses from the general hospital budget. The nurses were thereby given self-government so far as their training was concerned. In the past hospitals had too often treated the nurse as a pair of hands. What the nurse did was governed not by her training but by the need of the hospital for cheap labour. Every nurse and doctor thought that the Bill was a milestone in the history of the training of nurses. He congratulated the Minister of Health in doing what he himself had impatiently awaited for forty years. Almost equally important was the provision in the Bill for bringing the standard of efficiency of the smaller hospitals up to the level of the best. Everyone would welcome the bridge between the teaching hospitals and the smaller hospitals in the standing nurse-training committees which were not under the regional hospital boards. If the nurses were in a majority on these committees everyone would welcome their establishment and the financial powers given to them.

When they came to the other executive function, that of examining, the position was different. In 1919 a central State examination for nurses had been established which had done much to raise minimum standards everywhere. Under the Bill there would be no national minimum standard, and he feared there might be a lowering of the standard by regional committees under the pressure of local opinion. The more they were driven to shifts and expedients for meeting the shortage of nurses the more necessary it was to preserve somehow the standards they had known in the past. That was why he was concerned that the teaching hospitals were put into the regional machinery for the purpose of training nurses. This was the first departure from the principle Mr. Bevan had laid down in the Health Service Act that teaching hospitals should be kept outside the regions. The teaching hospitals in the past spent ten times more money in training nurses than did the other hospitals. In the teaching hospitals was the "growing edge" of nursing, and he looked with misgiving on the possibility that that edge would be blunted by putting these hospitals under the regions.

Lord CROOK feared that the experiments which the General Nursing Council would authorise might cause delay in making decisions on general principles. In the next few years the field of recruitment would be more restricted. The number of women available for all kinds of employment in this country would drop by 300,000 in the next four years. The House was bound to ask that decisions on the general staffing problems of the hospitals should come from the Government within the next twelve months. He was surprised that the Bill omitted any suggestion of an annual report from the General Nursing Council.

Independent Financing

Lord WEBB-JOHNSON said he had long pressed for the independent financing of the training of nurses, and he had urged that the status of the nurse in training should be equal to that of an undergraduate in a university. He had had the privilege of planning a nurses college given by Colonel John Astor, which provided in a London hospital a college equal to any in the older universities. He was disappointed that the Minister of Health had selected the General Nursing Council as the body for general control of the funds for bringing about this improvement. He thought that something comparable to the University Grants Committee would be more suitable. Clause 2 of the Bill made it inevitable that the nurse-training committees in each area would be largely under the control of the regional boards. He agreed with Lord Moran that if teaching hospitals were brought under the control of such a committee and of the regional board it would be a matter of great anxiety. He hoped that Clause 5 would provide for educational grants to hospitals not vested in the Minister. He trusted that the Government would consider accepting on Clause an amendment empowering the General Nursing Council to recognize postgraduate courses and to register extra qualifications.

Lord SHEPHERD said that, although publication of the nursing register cost £6,000 a year, only 200 copies were published, which only 140 were sold. The policy of the Government to relieve nurses of all work not requiring nursing skill had been announced in 1945 and in notes recently issued for the guidance of hospital management committees. Since June, 1948, domestic employees in hospital had increased from 117,000 to 123,000. The Government intended that grants should be made to the General Nursing Council and through that Council to the training committees to cover the cost of training. The expenditure of hospital management committees in relation to training within the hospitals would also be chargeable to the Government. A Bill for Scotland would be introduced later. In making appointments by the Minister to the General Nursing Council or to the standing nurses training committees there would be prior consultation with organizations representing the medical and other professions. In the past medical men had found their way on to these committees, and under the new dispensation there would be no change. The Minister had for many years included both medical representatives and hospital administrators among his nominees to the General Nursing Council. There was no reason to suppose that any change in this practice was likely. It would be open to regional hospital boards or boards of governors of teaching hospitals to include medical representatives among members appointed by them to the standing nurse-training committees. The constitution of nurse-training committees would be settled by Order.

There was no reason to think that disclaimed hospitals would be prejudiced, and Lord Moran need not fear that the standard of training would be lowered by regional examinations. In the National Health Service Act teaching hospitals were dealt with separately because of their unique position in the teaching of medicine. The same analogy could not be drawn with reference to the training of nurses, of whom only a small proportion were trained in teaching hospitals. The Bill did not provide that the General Nursing Council should publish a report to the Minister, but the matter was being considered, and something more might be said about it before the committee stage.

The Bill was then read a second time.

Fitness of German Generals

The Bishop of CHICHESTER on May 5 in the House of Lords called attention to the cases of Field-Marshal Von Rundstedt, General Strauss, and Field-Marshal Von Manstein. He asked whether these men were fit to stand trial. The Lord Chancellor, Lord JOWITT, said that since he had stated last November that the duty of the British Government was to put these three men on trial reports had reached him indicating that two were not fit to stand trial. Even these reports were not unanimous, and he got the doctors concerned to see him, along with the Attorney-General and Professor Sir Henry Cohen. Having heard seven or eight of the doctors, they came to the conclusion that the health of Von Rundstedt and of Strauss was not such as to justify the ordeal of a trial which would last six to eight weeks. Everyone agreed that Von Manstein was perfectly fit to stand his trial. Von Manstein was accused of breaches of the usages of war, with the murder of vast numbers of people.

MILK BILL

On April 29 the Milk (Special Designations) Bill passed through the Report Stage in the House of Commons after minor amendments had been moved on the motion of Dr. SUMMERSKILL. The Third Reading debate followed immediately.

Dr. Summerskill said that the Bill would assure consumers of a safe milk supply and the producer would know that milk would be guarded during all stages of distribution. The Bill was a charter to safeguard young lives from the effects of bovine tuberculosis and to safeguard the community from the risk of milk-borne disease.

Captain CROOKSHANK said the real remedy was to clean up the herds. Until that happy result could be obtained the Bill would certainly serve its purpose.

Mr. SOMERVILLE HASTINGS was astounded that the country had taken so little interest in the Bill. When the Bill came into operation, presumably on Oct. 1, it would become illegal for the accredited producer to mix milk from two or three herds before bottling. That would be a real advance. If milk from more than one herd was mixed the distribution of possible infection was widened and the difficulty of tracing that infection was increased. The term "accredited" would go in October, 1954, and in one area after another, as pasteurizing plant became

available, an order would be issued that only designated milk might be sold. But even pasteurized milk was not safe if put into churns and transferred to another bottling plant. He regretted that for the time being this practice was permitted under the terms of the Bill. If it was shown that pasteurized milk could be a source of danger, the whole idea of pasteurization might be discredited. Dr. Summerskill had said during the Committee Stage that she proposed to issue a regulation that after 1954 all milk must be bottled on the spot immediately after being pasteurized. Mr. Hastings regretted that this was not stated in the Bill.

Dr. BROUGHTON felt sure the Bill would help to eradicate bovine tuberculosis. Dr. HADEN GUEST believed the Bill would prove a landmark in the health of the country and especially in the health of the children.

The Bill was then read a third time and passed. It had already passed the House of Lords.

Irish Qualifications

By the Ireland Bill, introduced by Mr. ATTLEE on May 3, it is proposed that, "notwithstanding that the Republic of Ireland is not part of His Majesty's dominions, the Republic of Ireland is not a foreign country for the purposes of any law in force in any part of the United Kingdom or in any colony, protectorate, or United Kingdom trust territory." This is interpreted in Whitehall as implying that Southern Irish medical qualifications will continue to be valid in the United Kingdom.

Alien Doctors

On May 5 Mr. WILLIAM WELLS asked how many applications had been made for registration under Section 3 of the Medical Practitioners and Pharmacists Act, 1947; how many such applications were pending; for how long they had been pending; and when they would be decided.

Mr. BEVAN replied that in all there had been 174 medical applications, of which 39, made at varying dates during the last year, were still pending. The decision on nine of these had been deferred for the time being in the applicants' own interest. These applicants, being abroad, could not be registered unless resident in the U.K. Further information was awaited from 10. An early decision was expected on 3. One application was received a few days ago. The remaining 16 involved legal questions of some difficulty which the G.M.C. was endeavouring to resolve as speedily as possible.

Mr. WELLS asserted that one application had been delayed for a year. Mr. BEVAN remarked that as he did not know this case he could not say that the delay was unreasonable.

Homoeopathy

On May 5 Mr. SKINNARD asked whether Mr. Bevan would arrange that lists of homoeopathic medical practitioners, similar to publicly exhibited lists of practitioners in other specialized fields of medical service, were provided for the information of persons desirous of homoeopathic treatment.

Mr. BEVAN refused to do this. He said it would not be in the public interest to seek to distinguish different forms of therapy practised by doctors providing general medical services. Various forms of treatment often differed with the doctors who gave them. It was undesirable to distinguish between one form of treatment and another. Homoeopathic treatment could be given by registered medical practitioners. There was no reason why it should be distinguished from other forms of treatment.

Colonel STODDART-SCOTT asked Mr. Bevan to assure the House that he would add no names to the list except those of practitioners who had adequate medical education and appropriate medical qualifications.

Mr. BEVAN said no one was allowed to practise who was not on the *Medical Register*. It was assumed that those registered had an adequate medical education.

Dr. SEGAL said it was felt to be unethical for any doctor to advertise himself as a practitioner in a particular form of treatment.

Mr. SKINNARD said he did not ask that a doctor should advertise himself, but that information should be given to patients under the National Health Service.

Mr. BEVAN said the action suggested by Mr. Skinnard would tend to advertise certain forms of treatment.

Milk in Scotland.—Mr. WOODBURN stated on April 26 that there were 100 pasteurizing or heat-treatment plants in Scotland. The milk from these was tested fortnightly and the results generally were satisfactory. Of the milk sold off Scottish farms, some 70% was from tuberculin-tested herds. Milk as sold to the public comprised approximately 10% sold as "T.T.," 70% pasteurized or heat treated, and 20% sold as ordinary non-pasteurized milk.

No. 16

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended April 23.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.
Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.
A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1949 (a)	(b)	(c)	(d)	(e)	1948 (Corresponding Week) (a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	34	3	23	—	—	43	5	17	1	2
Deaths		—	1				—	1		
Diphtheria	95	8	33	3	1	179	13	42	17	4
Deaths	—	—	—	—	—	1	—	1	—	—
Dysentery	52	3	26	1	2	252	29	16	1	—
Deaths				—	—				—	—
Encephalitis lethargica, acute	—	—	1	—	—	—	—	1	—	—
Deaths		—					—			
Erysipelas			20	6	8			43	6	2
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				46					17	
Deaths	23	2	9	4	1	33	3	6	7	—
Measles*	13,514	1699	265	323	187	9,092	1147	296	117	47
Deaths†			1	1	1			1	1	—
Ophthalmia neonatorum	51	5	16	—	—	52	1	9	1	—
Deaths										
Paratyphoid fever	7	1	—	—	—	3	—	2(B)	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal	759	47	13	16	11	593	31	1	6	3
Deaths (from influenza)‡	51	2	4	4	—	10	1	1	2	—
Pneumonia, primary			269	48				192	32	
Deaths	185	27		7	10	192	32		13	7
Polio-encephalitis, acute	1	—				2	—			
Deaths										
Poliomyelitis, acute	8	1	—	2	1	16	2	5	1	—
Deaths§	1	—				2	—			
Puerperal fever		—	5				—	9		—
Deaths										
Puerperal pyrexia‖	94	14	5	—	—	131	14	11	3	—
Deaths		—					—			
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	953	65	174	95	30	1,535	113	257	41	35
Deaths†			—	—	—			—	—	—
Smallpox	5	1	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Typhoid fever	3	—	2	2	1	4	1	—	2	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Whooping-cough*	2,546	157	119	149	50	3,727	271	55	56	20
Deaths	4	1	1	2	—	13	—	—	1	—
Deaths (0–1 year)	301	44	44	20	5	317	36	42	23	10
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	4,718	678	643	206	134	4,581	725	621	195	121
Annual death rate (per 1,000 persons living)			12·9	12·8				12·5	12·2	
Live births	8,671	1352	1080	385	268	8,701	1393	1115	361	272
Annual rate per 1,000 persons living			21·7	23·5				22·5	22·6	
Stillbirths	242	28	17			219	26	33		
Rate per 1,000 total births (including stillborn)			15					29		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.
† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.
‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.
§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.
‖ Includes puerperal fever for England and Wales, Eire, and Northern Ireland.

EPIDEMIOLOGICAL NOTES

Typhoid Fever at Crowthorne

Cases of typhoid fever associated with the outbreak at Crowthorne (May 7, p. 827) have been reported from Camberley, Didcot, and Ramsgate, and the total is now 38. Although the source and mode of infection have not yet been discovered, the evidence so far obtained suggests that the vehicle of infection was distributed only in Crowthorne and over a limited period of time, probably about April 16. The fears at first entertained of there being a very large number of cases may therefore prove to be unwarranted.

Smallpox

No further cases have been reported among passengers from the s.s. *Mooltan*. On May 7 an unvaccinated woman aged 20 was admitted to Liskeard Smallpox Hospital in Cornwall as a suspected case of smallpox. The diagnosis has since been confirmed by laboratory tests. It has not been possible to establish the connexion between this patient, who resided in a small village a few miles from Liskeard, and any of the patients previously reported among the passengers from the *Mooltan*.

Discussion of Table

In *England and Wales* there were increases in the notifications of measles 448 and whooping-cough 279, with a decrease of 86 in the notifications of scarlet fever.

Decreases in the notifications of measles were recorded in Essex 162, Middlesex 153, and Glamorganshire 112; there were increases in Surrey 131 and Kent 117. A small increase in the incidence of whooping-cough was recorded in most areas—for example, Essex 41 and Middlesex 34; the only noteworthy exception to the general trend was a decrease of 37 in London.

The notifications of scarlet fever showed very little change from the preceding week; the largest changes were decreases in Lancashire 33 and Essex 25. There was no variation of any size in the local returns of diphtheria.

No large outbreaks of dysentery were notified during the week. The chief centres of infection were Lancashire, Liverpool C.B. 8; Yorkshire West Riding, Huddersfield C.B. 8; Cumberland, Penrith R.D. 5; Essex, West Ham C.B. 5; and Norfolk, Norwich C.B. 5.

In *Scotland* infectious diseases were more prevalent during the week. There were increases in the notifications of acute primary pneumonia 67, measles 34, cerebrospinal fever 15, scarlet fever 12, and dysentery 10. There was a fall in the incidence of whooping-cough 31. These changes in the trends of infectious diseases were mainly contributed by Glasgow. The rises in the incidence of dysentery were in the cities of Glasgow 6 and Stirling 5. The chief feature of the notifications of diphtheria was an increase of 10 in Glasgow.

In *Eire* increases were recorded in the notifications of measles 120, whooping-cough 70, diarrhoea and enteritis 24, and scarlet fever 22. In Dublin C.B. there were increases in the incidence of measles 107, whooping-cough 62, scarlet fever 18, and diarrhoea and enteritis 17.

In *Northern Ireland* the notifications of measles rose by 15 and the notifications of whooping-cough fell by 23. The incidence of measles declined in Belfast C.B. 17 and County Armagh 17. The decrease in the incidence of whooping-cough was fairly general throughout the country.

Tuberculosis, Cancer, and Maternal Mortality

The provisional death rates per million population for England and Wales during 1948 were as follows:

	Males	Females	Persons
Respiratory tuberculosis	555	335	440
Other tuberculosis	72	62	67
Cancer	1,965	1,761	1,858

The maternal mortality per 1,000 total live and still births in England and Wales in 1948 was:

Post-abortive infection	0·11
Abortion without mention of septic conditions	0·05
Infection during childbirth and the puerperium	0·13
Other maternal causes	0·73
Total	1·02

Excluding abortion 685 mothers died in childbirth in 1948, and deaths due to abortion numbered 123.

Week Ending April 30

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 785, whooping-cough 2,905, diphtheria 98, measles 11,436, acute pneumonia 453, cerebrospinal fever 32, dysentery 38, acute poliomyelitis 14, paratyphoid 1, and typhoid 6. Deaths from influenza in the great towns numbered 39.

Medical News

Research into Home Analgesia

The Medical Research Council has set up a committee to promote research into analgesia suitable for use by midwives on a recommendation in the Report of the Working Party on Midwives. The chairman is Sir William Gilliatt, P.R.C.O.G., and the secretary Mr. G. S. W. Organe, anaesthetist to Westminster Hospital, who is also secretary of the Council's Anaesthetics Committee. The other members are: Dr. Josephine Barnes, Dr. Albertine Winner, Professor R. R. Macintosh, Dr. E. A. Pask, Professor A. D. Macdonald, and Dr. F. H. K. Green. The committee's terms of reference will include the study, if thought desirable, of modified methods of administering existing analgesic agents as well as the initiation of further research for new agents. Investigations are likely to take a considerable time. Before a final decision can be reached on any new methods by which midwives could safely administer analgesics without medical supervision, extensive clinical trials will probably be necessary. These may have to be conducted at home confinements in charge of midwives. At present the Central Midwives Board—upon whom responsibility rests for approving drugs and apparatus for the administration of analgesics by midwives—has approved the gas-and-air method for midwives specially trained in its use. The Board has been advised by the Royal College of Obstetricians and Gynaecologists, and so far five different types of gas-and-air machines have been approved.

Award of Mickle Fellowship for Dr. Avery Jones

Dr. Francis Avery Jones has been awarded the William Julius Mickle Fellowship by the University of London for 1948–9. It is of the value of approximately £250, and is offered annually to a man or woman resident in London and a graduate of the University who in the opinion of the Senate has done most to advance medical art or science within the preceding five years and has therein shown conspicuous merit. Dr. Avery Jones is Physician and Deputy Medical Director at the Central Middlesex County Hospital. He graduated in 1934, taking the M.R.C.P. and proceeding M.D. two years later; he was elected F.R.C.P. in 1946. His Goulstonian Lectures on "Haematemesis and Melaena" were published in this *Journal* on Sept. 20 and 27, 1947.

American National Health Council

At the 29th Annual Meeting of the American National Health Council held recently Mr. Philip R. Mather was elected president, Dr. Ernest L. Stebbings vice-president, Dr. Haven Emerson treasurer, Dr. Franklin M. Foote assistant treasurer, and Dr. James E. Perkins secretary. Four additional organizations were elected to membership in the Council, which consists of leading national health agencies, voluntary and governmental. Those elected were: the American Medical Association and the National Infantile Paralysis Foundation, both elected to active membership; the American Physical Therapy Association and the National Multiple Sclerosis Society, associate members.

Index to National Formulary

The Northern Ireland General Health Services Board has issued to general practitioners in the Northern Ireland Health Service an index to the *National Formulary*. The drugs are listed under such headings as "Formulae Containing Penicillin," "Used in Treatment of Coughs," and "Analgesics, Anodynes, Hypnotics, and Sedatives."

Peckham Health Centre Bulletin

Peckham Health Centre has issued the first number of a monthly bulletin entitled *Peckham*. It is attractively produced and illustrated, and includes short articles on the health centre's work and history. The subscription for twelve issues is 7s. 6d., post free. It may be obtained from the Editor, *Peckham*, 8F, Hyde Park Mansions, London, N.W.1.

Argentine Society of Pathology

Professor Humberto R. Rugiero has been elected President of the Argentine Society of Pathology.

Diamorphine Linctuses: Correction

The Home Office has drawn the attention of the Ministry of Health to an error in the information it has recently issued (*Journal*, April 23, p. 733, and April 30, p. 787) about the dispensing of linctus diamorphinae *N.W.F.* The only prescriptions for Dangerous Drugs which may be ordered by title are those named in the *B.P.*, the *B.P.C.*, or the *Drug Tariff*. All other prescriptions not written out in full cannot be dispensed but must be returned to the doctor for amplification. Since the *N.W.F.* is no longer a recognized formulary, a chemist would be acting illegally in dispensing linct. diamorph. *B.P.C.* when linct. diamorph. *N.W.F.*, which is no longer included in the *Drug Tariff*, is prescribed.

Czechoslovak Award

The President of the Czechoslovak Republic has conferred the decoration of Chevalier of the Order of the White Lion upon Dr. Frederick Himmelweit in recognition of services rendered during the war.

COMING EVENTS

Bicentenary of the Birth of Edward Jenner

The Royal College of Physicians of London and the Royal College of Surgeons of England are commemorating the 200th anniversary of the birth of Edward Jenner on May 17. During the afternoon at the Royal College of Surgeons (Lincoln's Inn Fields, London, W.C.), Sir Edward Mellanby, F.R.S., will deliver a commemorative lecture entitled "Jenner and his Impact on Medical Science." In the evening there will be a reception at the Royal College of Physicians (Pall Mall East, London, S.W.). Admission to both these functions is by invitation only.

Medical Golf

The Annual Competition of the Manchester and District Medical Golfers' Association will be held on the course at Mere, Cheshire, on May 25. The Challenge Cup will be competed for by medal play under handicap. The Walter Gold Medal will be held for one year by the member returning the best gross score; the Walter Silver Medal will be held for one year by the member returning the best gross score from among those with handicaps of ten and upwards. Two prizes will also be presented (1) for the best net score for holes 1-9, and (2) for the best net score for holes 10-18. The annual subscription is 7s. 6d., and comprises the entrance fee of the Annual Competition. New members are required. Any medical man is eligible for membership provided he is a member of a recognized golf club within the area. Particulars may be obtained from the hon. secretaries, Manchester and District Medical Golfers' Association, c/o British Medical Association, 33, Cross Street, Manchester, 2.

Association of Surgeons of Great Britain and Ireland

The annual meeting of the Association of Surgeons of Great Britain and Ireland will be held at University College (Physics Theatre), Earlsfort Terrace, Dublin, on May 26, 27, and 28. The programme is as follows: May 26, 9.30 a.m., business meeting; 10 a.m., discussion on "Surgical Ritual," to be opened by Sir Hugh Cairns, Sir Reginald Watson-Jones, Mr. Julian Taylor, Mr. F. Gill, and Mr. D. M. Douglas; 2.15 p.m., operating sessions or demonstration of cases at various Dublin hospitals; 4 p.m., at Trinity College, lecture by Professor Geoffrey Jefferson, F.R.S., "Descartes and the Localization of the Soul"; 5 p.m. to 7 p.m., reception at Trinity College by invitation of the Provost; 7.45 p.m., annual dinner at Gresham Hotel. May 27, 9.30 a.m., discussion on "The Use and Abuse of Streptomycin (excluding Pulmonary and General Tuberculosis)," to be opened by Sir Alexander Fleming, F.R.S., Mr. E. W. Riches, and Mr. A. Dickson Wright; 11.45 a.m., alternative meetings at (*a*) University College, discussion on "Resection and Reconstruction of the Trachea," to be opened by Mr. C. G. Rob and Mr. R. H. R. Belsey, and at (*b*) Royal College of Surgeons in Ireland, short paper by Mr. Geoffrey L. Keynes, "Tumours of the Thymus Gland"; 2.15 p.m., operating sessions or demonstrations of cases at various Dublin hospitals; 5 p.m. to 7 p.m., reception by the Minister of Health. May 28, 9.30 a.m., short paper by Professor J. Adams-Ray (Stockholm), "Hypertonus in Venous Capillaries," followed by discussion on "Treatment of Injuries to Peripheral Nerves," to be opened by Professor J. Z. Young, F.R.S. ("The Process of Nerve Repair"), Mr. H. J. Seddon ("Indications for Exploration, Suture, and Grafting"), Sir James Learmonth ("Neurovascular Injuries"), Mr. R. B. Zachary ("Results of Nerve Repair"), and Miss Ruth Bowden ("Certain Factors Influencing Recovery"). Full particulars of the meeting may be obtained from the honorary secretary of the Association (Mr. H. W. S. Wright, F.R.C.S.) at 45, Lincoln's Inn Fields, London, W.C.2.

St. Cyres Lecture

Professor K. D. Wilkinson will deliver the St. Cyres Lecture on "Withering" at the Royal Society of Medicine (Barnes Hall), 1, Wimpole Street, London, W., and *not* at the Institute of Cardiology as announced in the *Journal* of April 30, (p. 784), on Wednesday, June 15, at 5 p.m.

Simpson-Smith Memorial Lecture

The second Alexander Simpson-Smith Memorial Lecture will be delivered by Mr. R. C. Brock at the Medical Society of London, 11, Chandos Street, W., on Wednesday, June 15, at 8.30 p.m., with Lieutenant-General Neil Cantlie, Director-General, Army Medical Services, in the chair. His subject is "The Surgical Treatment of Congenital Pulmonary Stenosis." Admission is by ticket only. Early application should be made to the Dean, West London Hospital Medical School, 1 and 3, Wolverton Gardens, Hammersmith, W.6.

Lectures on Pituitary Hormones

Professor Miriam E. Simpson, of Berkeley University, California, will give a series of lectures at the Hôpital Laënnec, Paris, on June 27–July 9. The lectures will be in English. The fee for the course is 3,000 francs. Particulars may be obtained from Dr. Loublie, 20, Rue Marbeau, Paris, 16. Registrations cannot be accepted after June 20.

Summer School in Austria

The British Social Hygiene Council will hold a summer school on "The Family and the Nation" at Pertisau, in the Austrian Tyrol, from Aug. 17 to Sept. 1. Subjects to be discussed include nutrition, human heredity, the welfare of old people, and juvenile delinquency. The school is intended primarily for magistrates, almoners, nurses, and teachers. The inclusive cost is about £34. Information may be obtained from the B.S.H.C., Tavistock House North, Tavistock Square, London, W.C.1.

SOCIETIES AND LECTURES

Monday

BIRMINGHAM UNIVERSITY.—At Anatomy Theatre, Medical School, Birmingham, May 16, 4 p.m., "*The Excretion of Water by the Kidney, with Special Reference to its Neurohypophysial Control*," William Withering Lecture by Professor E. B. Verney, F.R.S.

EDINBURGH UNIVERSITY.—At Physiology Lecture Theatre, University New Buildings, Teviot Place, Edinburgh, May 16, 5 p.m., "*Maya and Inca Medicine*," by Dr. Douglas Guthrie.

LONDON UNIVERSITY.—At King's College, Strand, W.C., May 16, 5.30 p.m., "*Venous Return in Health and Disease*," by Professor Kl. Gollwitzer-Meier (Hamburg).

LONDON: UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, W.C., May 16, 4.45 p.m., "*Selective Toxicity with Special Reference to Chemotherapy*," by Professor Adrien Albert.

Tuesday

BIRMINGHAM UNIVERSITY.—At Anatomy Theatre, Medical School, Birmingham, May 17, 4 p.m., "*The Excretion of Water by the Kidney, with Special Reference to its Neurohypophysial Control*," William Withering Lecture by Professor E. B. Verney, F.R.S.

EDINBURGH POSTGRADUATE BOARD FOR MEDICINE.—At Anatomy Lecture Theatre, University New Buildings, May 17, 5 p.m., "*Viruses and Acute Pulmonary Disease in Man*," by Professor C. H. Stuart-Harris.

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—May 17, 5 p.m., "*Sex Hormones in Dermatology*," by Dr. D. I. Williams.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., May 17, 11 a.m., "*Modern Interpretation of Serological Reactions*," by Dr. R. Thomson.

LONDON UNIVERSITY.—At London School of Economics and Political Science, Houghton Street, Aldwych, W.C., May 17, 5 p.m., "*The National Health Service*," by Sir James S. Ross.

LONDON: UNIVERSITY COLLEGE.—At Physiology Theatre, Gower Street, W.C., May 17, 5.15 p.m., "*Physiological Properties of Ethyl Alcohol*," by Dr. M. Grace Eggleton.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, London, W.C.—May 17, 4 p.m., "*Jenner and His Impact on Medical Science*," by Sir Edward Mellanby, F.R.S. Lecture to commemorate the bicentenary of the birth of Edward Jenner.

WRIGHT-FLEMING INSTITUTE OF MICROBIOLOGY, St. Mary's Hospital Medical School, Paddington, W.—May 17, 5 p.m., "*Bacterial Antigens*," by Dr. W. T. J. Morgan, F.R.S.

Wednesday

GLASGOW UNIVERSITY: DEPARTMENT OF OPHTHALMOLOGY.—May 18, 8 p.m., "*The Structure of the Vitreous Humour*," by Dr. Antoinette Pirie.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., May 18, 11 a.m., "*Cerebrospinal Fluid Tests for Syphilis*," by Dr. R. Thomson.

LONDON UNIVERSITY.—At King's College, Strand, W.C., May 18, 5.30 p.m., "*Blood-reaction and Blood-flow in Muscular Activity*," by Professor Kl. Gollwitzer-Meier (Hamburg).

OXFORD UNIVERSITY.—At Radcliffe Infirmary, Oxford, May 18, 5 p.m., "*Neurosurgical Problems of Childhood*," by Dr. Franc D. Ingraham (Harvard).

ROYAL SOCIETY OF ARTS, John Adam Street, Adelphi, London, W.C.—May 18, 2.30 p.m., "*Scientific Information Services*," Aldred Lecture by Sir Alfred Egerton, F.R.S.

ROYAL MICROSCOPICAL SOCIETY.—At B.M.A. House, Tavistock Square, London, W.C., May 18, 5.30 p.m., Discussion: "*Mechanism of Cell Division*," to be opened by Dr. A. F. W. Hughes, F.R.M.S.

SOCIETY OF CHEMICAL INDUSTRY: FOOD GROUP.—At London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, W.C., May 18, meeting of Nutrition Panel. (1) 6 p.m., annual general meeting; (2) 6.15 p.m., "*Biscuits, Cakes, and other Flour Confectionery as Food*," Mr. W. S. Butterworth (Introduction); Mr. C. H. F. Fuller (Cakes); Messrs. D. M. Freeland and A. Bradley (Biscuits); Professor J. Yudkin (Nutritive Value of Flour Confectionery).

Thursday

BIRMINGHAM UNIVERSITY.—At Anatomy Theatre, Medical School, Birmingham, May 19, 4 p.m., *"The Problems of Stress Incontinence of Urine in the Female,"* Ingleby Lecture by Mr. Charles D. Read.

BRITISH ASSOCIATION OF PHYSICAL MEDICINE.—At Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C., May 19, 5 p.m., *"The Mechanism of Pain,"* by Dr. Graham Weddell.

BRITISH INSTITUTE OF RADIOLOGY, 32, Welbeck Street, London, W.—May 19, 8.30 p.m., *"Medical Radiology. Retrospect and Prospect,"* Presidential Address by Dr. Hugh Davies; followed by film: *"Cineradiography of Joints,"* by Dr. A. E. Barclay and Mr. H. J. Seddon.

EDINBURGH UNIVERSITY.—At University New Buildings, Teviot Place, Edinburgh, May 19, 5 p.m., *"Fat Absorption and Some of Its Problems,"* Sharpey Schafer Memorial Lecture by Professor H. S. Raper, F.R.S.

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., May 19, 11 a.m., *"Treatment of Syphilis,"* by Dr. W. N. Mascall.

MIDDLESEX COUNTY MEDICAL SOCIETY.—At Chase Farm Hospital, The Ridgeway, Enfield, May 19, 3 p.m., meeting.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE.—At 26, Portland Place, London, W., May 19, 7.30 p.m., *"Tropical Diseases in Brazil,"* by Professor B. Malamos (Athens). Illustrated by lantern slides.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL, Hyde Park Corner, London, S.W.—May 19, 4.30 p.m., *"Neurology,"* lecture-demonstration by Dr. A. Feiling.

Friday

FACULTY OF RADIOLOGISTS: THERAPY SECTION.—At Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C., May 20, 2.15 p.m., *"The Value of X-ray Examination in Bronchogenic Cancer,"* Skinner Lecture by Dr. P. F. Möller (Copenhagen).

APPOINTMENTS

POSTGRADUATE MEDICAL SCHOOL OF LONDON: DEPARTMENT OF ANAESTHETICS.—*Senior Lecturer*, H. Woodfield-Davies, L.M.S.S.A., D.A., F.F.A., R.C.S.; *Lecturers*, A. J. W. Beard, M.D., D.A., F. G. Wood-Smith, M.B., B.Chir., D.A.; *Assistant Lecturers*, Dorothy Spence-Sales, M.B., Ch.B., D.A., Hilda Roberts, M.R.C.S., L.R.C.P., D.A., J. A. Smith, M.B., B.Chir., D.A.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Rosewarne.—On April 12, 1949, at 26, Latchett Road, Woodford, London, E., to Barbara, wife of Dr. D. D. Rosewarne, a daughter.

Walton.—On April 29, 1949, at the Queen Elizabeth Hospital, Birmingham, to Cynthia (née Moris), wife of Kenneth Walton, M.B., B.S., a daughter.

Wand.—On May 2, 1949, at Wellhouse Hospital, Barnet, to Betty (née Manders), wife of Dr. L. G. R. Wand, a daughter—Penelope Jane.

MARRIAGES

Goldacre—Wight.—On March 20, 1949, at St. Lukes, West Norwood, James A. H. Goldacre, M.R.C.S., L.R.C.P., to Miss Barbara Wight, M.C.S.P., M.E.L.E.T.

O'Reilly—Gavin.—On April 30, 1949, at St. Edmunds, Bolton, P. O. O'Reilly, M.B., B.Ch., deputy R.S.O., Bury Infirmary, and 42, Bolton Street, Dublin, to Miss Margaret Gavin, Bolton Royal Infirmary.

DEATHS

Craig.—On April 23, 1949, at Royal Sussex County Hospital, Barry Alexander Craig, L.R.C.P.&S.I. and L.M., Lieutenant-Colonel R.A.M.C., retired, of Beech Cottage, Burgess Hill, Sussex.

Devas.—On April 23, 1949, Horace Charlton Devas, M.R.C.S., L.R.C.P., Surgeon Captain R.N., retired.

Eccles.—On April 24, 1949, at Driffield, Robert Burton Eccles, M.R.C.S., L.R.C.P.

Gemmell.—On April 20, 1949, Leonard Woodburn Gemmell, M.B., Ch.B., Surgeon Commander R.N., retired.

Hope.—On April 21, 1949, at 5, The Avenue, Knaresborough, Charles William Menelaus Hope, O.B.E., F.R.C.S., aged 68.

Kay.—On April 24, 1949, at Leamington Spa, Winifred Julia Kay, M.B., B.S.

McEntire.—On April 25, 1949, in London, following an operation, Samuel Drummond Greer McEntire, L.R.C.P.&S.I. and L.M., of Great Baddow, Chelmsford, Essex.

McGregor.—On April 23, 1949, at a Glasgow hospital, George Charles McGregor, M.B., C.M., late of Kuala Lumpur, F.M.S.

MacKellar.—On April 21, 1949, at Ash Tree House, Savile Town, Dewsbury, John Donald Matheson MacKellar, M.B., Ch.B.

Nightingale.—On March 30, 1949, at Thurnby, 17, Devonshire Road, St. Annes-on-Sea, Wilfrid Nightingale, M.B., Ch.B.

Parsons.—On April 22, 1949, at Cheltenham, Christopher Thackray Parsons, O.B.E., M.D., of South Leigh Road, Havant, aged 78.

Paterson.—On April 20, 1949, at Liberton Hospital, Edinburgh, Thomas Clerkson Paterson, M.B., C.M., aged 89.

Phillips.—On April 25, 1949, at The Priory, Roehampton, Charles Morley Phillips, M.D., formerly of Bristol, aged 80.

Pollock.—On April 22, 1949, Edward Stoute Pollock, M.D., of Hilcot, Rydon Lane, Exeter.

Power.—On April 26, 1949, at 20, Hazelwood Lane, Palmers Green, London, N., Maurice Aloysius Power, *M.C.*, M.B., B.Ch.

Saxby.—On April 19, 1949, at Berkhamsted, Ida B. Saxby, D.Sc., M.R.C.S., L.R.C.P.

Trewby.—On April 17, 1949, Henry William Trewby, M.R.C.S., L.R.C.P., L.D.S., of Hurstbourne, Tarrant, Andover, Hants.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Inoculation against Typhoid and Tetanus

Q.—*I have recently seen it advocated that children living on a farm should be inoculated against tetanus and typhoid. What dosage would you suggest for the following ages: 8, 6, 5, years, and 6 months? Is it necessary to inoculate against typhoid when the water is pumped up from a specially sunk deep well?*

A.—Inoculation against typhoid for children living on farms would seem advisable only if it is known that this disease is endemic in the area and if there is reason to suspect the water supply. A pumped water supply from a deep well should be satisfactory if precautions have been taken to prevent the risk of contamination with sewage. If there is some doubt about the purity of the water, arrangements should be made with the medical officer of health for samples to be tested bacteriologically. Children under 1 year need not be inoculated against typhoid. For all children up to 8 years one-third of the adult dose should be given.

Tetanus is a very rare infection in Britain, and the risk to country children must be small. If, however, protection is desired, it is preferable to give the children two doses of tetanus toxoid at an interval of six weeks or more rather than to give them a dose of tetanus antitoxin whenever they have any accidental wound which might be contaminated with soil containing tetanus spores. A primary course of immunization should be reinforced by a boosting dose one year later. The dose of tetanus toxoid for a child under 1 year should be a quarter of the adult dose—0.25 ml.—and for older children one-third to one-half of an adult dose—0.3 to 0.5 ml.

Thoracoplasty

Q.—*Is thoracoplasty now being done in one stage and with the removal of two or three ribs only? What are the indications for this one-stage operation, and are the results as good as those of the more extensive procedure?*

A.—The general trend in the technique of thoracoplasty for pulmonary tuberculosis has been towards more selective operations. The old paravertebral thoracoplasty of Sauerbruch and the more extensive operation of Brauer were usually complete in that parts of all the ribs, with the exception of the lowest two or three, were removed. The aim of the modern operation is to produce a selective collapse and relaxation of the affected part of the lung and to make this local collapse as complete as possible. For anatomical reasons truly selective collapse of this sort by plastic operations on the ribs is usually possible only for lesions involving the upper part of the lungs. For these an attempt is made to adapt the size of the operation to the degree of collapse thought to be required to deal effectively with the diseased area; the usual criterion of effectiveness is closure of cavities. The effectiveness of the collapse is often increased in suitable cases by combining the operation on the ribs with some form of apicolysis. Generally, however, the operation must be done in more than one stage, and it is very seldom that, even for high apical cavities, a procedure involving fewer than five ribs is satisfactory. The number of stages required will depend partly on the extent of collapse required to control the disease and partly on the patient's general condition; a severely ill patient will tolerate less at each stage than one in good condition. Since the extent of the procedure should be modified to suit the extent of the disease, one cannot usefully discuss the results of limited as opposed to extensive operations.

Blood-clot and Haemostasis

Q.—*Could you explain why clot prevents haemostasis? Why is it that clearing clot out of a bleeding tonsillar fossa or a tooth socket will often stop the bleeding?*

A.—To be haemostatically effective, a blood-clot must be firmly and completely attached, forming an impervious seal

that covers a damaged area and extends down to its severed vessels. Clot formation of this sort cannot occur if there is an uninterrupted flow of blood, and normally a period of temporary vasoconstriction following injury provides time for firm coagulation to occur. If, for any reason, this vascular response is incomplete—or, more rarely, if blood coagulation is defective—loose, inefficient clots are produced, from beneath which bleeding continues. Such clots should therefore be regarded as being usually the result rather than the cause of defective haemostasis. Nevertheless, their mechanical removal will often achieve haemostasis, probably by direct stimulation of the cut vessels, with consequent constriction and the formation of a new and firmly attached clot. Removal of loose clots also allows any dressings, styptics, or simple pressure that may be applied to come into direct, and therefore effective, contact with the bleeding vessels.

Subarachnoid Haemorrhage

Q.—*Is it reasonable to expect a large quantity of blood in the spinal subarachnoid space and a very small quantity in the cerebral subarachnoid space in a person with subarachnoid haemorrhage who died five days after being found unconscious in the street?*

A.—The question does not state the cause of death, or whether the case was one of head injury or of "spontaneous" subarachnoid haemorrhage. But it is a very common post-mortem finding that intracranial subarachnoid haemorrhage has occurred into or has gravitated into the large subarachnoid cisterns about the base of the brain. The admixture of cerebro-spinal fluid retards clotting. As the individual survived for five days after being found unconscious, and as there is no information about his posture or condition during that time, the blood may well have drained from the intracranial sub-arachnoid cisterns, by means of the very adequate communications which exist, into the spinal subarachnoid space.

Absorption of Mercury

Q.—*It has recently been reported that the use of teething powders containing mercury may be the cause of pink disease. Is there any likelihood of absorption of mercury by a woman using a contraceptive containing it?*

A.—The evidence that pink disease is due to mercury poisoning is very incomplete, and amounts to little more than a suggestion that this may be so. If mercury is a cause, it acts in this way only in those children who have an idiosyncrasy to it. The possibility that mercury is absorbed from a mercury-containing contraceptive is another matter about which there is no certainty. Some consider that there is no danger of mercury absorption; others, that there is a real danger. It is certainly true that the body has a remarkable capacity for absorbing mercury in circumstances in which such absorption would seem unlikely. The risk of absorption would be increased in cases in which the remains of the contraceptive were not removed by douching.

North American Blastomycosis

Q.—*I have a patient in whom, after any superficial injury, an ulcer with much scabbing has always formed in the scar. Last December she underwent herniotomy and the scar had almost healed, when a similar reaction took place; the presence of Blastomyces dermatitidis was demonstrated microscopically in the scab. I would welcome any information about treatment, particularly with regard to the newer antimycotics.*

A.—Potassium iodide is the sheet-anchor in the therapy of North American blastomycosis. It is administered in graduated dosage, increasing almost to the limit of tolerance and continued beyond the period of apparent clinical recovery. One method is to start with 15 minims (0.9 ml.) daily of a saturated aqueous solution of potassium iodide divided into three 5-minim (0.3-ml.) doses well diluted with water, and increasing by 1 minim (0.06 ml.) daily (not 1 minim per dose daily) until the dosage of 60 minims (3.6 ml.) daily is reached. At this point, or earlier if symptoms of iodism appear, the dosage reverts to the original 15 minims daily and the series is repeated. Treatment should be continued for several weeks or months, as determined by its effects. Sodium iodide intravenously and ethyl iodide by inhalation may be given alternatively or in conjunction with the orally administered potassium iodide. Patients with blastomycosis frequently show a high degree of allergic sensitivity to the causative fungus, and in such cases the administration of iodide may cause a severe and even dangerous reaction. It is advisable, therefore, to apply the blastomycin test of dermal sensitivity before instituting treatment and, if necessary, to desensitize the patient by graduated doses of *Blastomyces dermatitidis* vaccine. Iodide treatment should be combined with, or in fact preceded by, specific vaccine therapy, supplemented by surgical and radiotherapeutic measures when indicated, and by general supporting treatment with appropriate diet, vitamins, and rest. The systemic form of the disease requires hospital treatment. The questioner should consult *Clinical Mycology*, by Conant and others (Saunders, 1945), for a detailed account of the treatment.

Blastomycosis (Gilchrist's disease) is indigenous to North America, and reports of the infection from other parts of the world have usually been based on wrong diagnoses. The literature contains only two well-authenticated records of the infection having been contracted in the Old World—one in London in 1925 and the other in France in 1947; both the patients had been engaged in handling materials imported from the United States. Therefore, unless the microscopical diagnosis in the present case has been made by a competent mycologist, it should be confirmed by isolation of *Blastomyces dermatitidis* from the lesions or by serological tests.

Grading of Catheters

Q.—*How do the various catheter scales compare, and are they all related to any basic measurement? Would it not be possible to standardize and unify these systems?*

A.—The majority of urologists use French catheters. The Charrière scale expresses its measurement in multiples of one-third of a millimetre; thus No. 5 indicates a diameter of 1⅔ mm. It is true that some of the French catheter-makers have recently adopted the Beniqué scale, in which a No. 10 represents No. 5 Charrière, but the majority of French catheters in this country are marked in the Charrière scale. The English scale is approximately one-half of the French, a No. 10 French being represented by a No. 5 English. It would, of course, be of advantage if English and American manufacturers would adopt the Charrière scale. The American scale is rarely used even by American instrument-makers. Its numbers correspond to two-thirds of the French numbers—that is to say, No. 20 American represents No. 30 French.

Angina of Effort

Q.—*A retired doctor aged 74 has the classical symptoms of effort angina, for which the usual remedies, such as nitroglycerin and potassium iodide, have been tried. Any further advice on treatment and climate would be welcomed.*

A.—On the whole, patients with angina pectoris are better in warm climates than in cold, but far less so than those with intermittent claudication; in fact, Lewis denied that cold weather had any demonstrable effect on angina, but this, however, is contrary to clinical experience. When conservative measures fail to the extent that the patient is incapacitated by angina, more drastic treatment is indicated. At the present time there are two methods that are perhaps most favoured: (1) administration of thiouracil, and (2) bilateral stellate and upper dorsal sympathectomy. It is doubtful, however, whether either method of treatment should be recommended without the advice of a specialist in cardiology.

(1) Methyl or propyl thiouracil may be given in doses of 0.2 g. thrice daily until improvement is noted, when the dose may be gradually reduced to the minimum that is effective (0.05 to 0.2 g. daily). If there is no improvement within six weeks treatment should be abandoned. Toxic reactions, particularly fever and rash, are rare with propyl thiouracil, but less so with methyl thiouracil, and may not be well tolerated by those subject to angina. Agranulocytosis is very uncommon and there is no need for weekly white-cell counts; but the patient should be instructed to report at once in the event of a sore throat, when penicillin should be given immediately, and a white-cell count taken while the drug is temporarily

withheld. The object of thiouracil treatment is not only to reduce the oxygen requirement and hence the work of the heart, but also to minimize the physiological response to adrenergic substances.

(2) If thiouracil fails, the pain pathways from the heart may be excised. The type of sympathectomy named above appears to reduce the risk of ventricular fibrillation and may improve the efficiency of the collateral coronary circulation as well as relieve pain; moreover, patients are not deprived of a warning signal when the coronary circulation is overtaxed, although the sensation experienced is rarely described as pain.

Inheritance of Werdnig-Hoffmann Paralysis

Q.—*A couple whose first two children died in the first year of life as a result of progressive spinal muscular atrophy (Werdnig-Hoffmann paralysis) are naturally apprehensive about having another child. What advice should be given? Having regard to normal marital relations, is sterilization of the wife indicated?*

A.—Inheritance of this disease is recessive, and the chance that any subsequent child will be affected is one in four. If the parents should feel—as they well may—that this is a risk that they dare not face, there is undoubtedly a case for sterilization. The writer believes that in Denmark, where enlightened eugenic laws have been in operation for some years, sterilization would be granted in this instance if the parents requested it. There is, however, no more reason for sterilizing the wife than the husband, for both are transmitting the gene. One point should be remembered, perhaps: should the sterilized partner chance to remarry, and hence the risk of the defect's appearing be reduced to negligible proportions, he or she might regret having taken such a step. It should also be understood that this is the medical answer to a medical question and does not pretend to deal with the legal and ethical considerations which obviously arise.

Testosterone in Gynaecomastia

Q.—*Arising out of the question about adolescent gynaecomastia (Nov. 27, 1948, p. 968), what dosage of methyl testosterone, and what method of administration, would you recommend for a boy of 15 who is considerably embarrassed by enlargement of the breasts. He is already 6 ft. 1½ in. (1.84 metres) tall, and one hesitates to use a preparation which may stimulate growth still further. He is also well developed sexually, and one wishes to avoid excessive stimulation of the sex organs.*

A.—The usual dosage of methyl testosterone is 5 mg. three times a day. This may result in some increase in size of the penis and some erections, but these effects are more likely to occur in hypogonadism than when sexual development is normal. The same is true of the accelerating effect of methyl testosterone on growth. If testosterone proprionate is given in very large doses, however—for example, 50 mg. injected daily—it has a tendency to accelerate union of the epiphyses. In the particular case in question, local inunction of testosterone ointment, 25 mg. per gramme, should be a safe procedure, limiting the total dosage to 100 mg. weekly. Testosterone therapy is based on the theory that the gynaecomastia is due to an actual or relative excess of oestrogens, the source of which may be the adrenal cortex. There is experimental evidence that, in some species at least, the breast is also stimulated by androgens, and by the anterior pituitary gland itself in the absence of the gonads, so that the problem is a complicated one.

Respiration in the Newborn

Q.—*Could you explain exactly how the work of Sir Joseph Barcroft proved the value of convulsant drugs in asphyxia neonatorum?*

A.—Sir Joseph Barcroft's book *Researches on Pre-natal Life* discusses in the last chapter the onset of respiratory movement in the newborn. There is no reference to the use of convulsant drugs, and the answer to the question therefore appears to be that Barcroft's work did not prove the value of such drugs in asphyxia neonatorum. The chapter describes the development of respiratory movements in the foetal sheep. By the 38th day the movements evoked by a tap on the face, between the eye and the mouth, extend to the diaphragm, but only as an item in a generalized movement. After the 40th day the response of the foetus to a tap is not merely a spasm but a rhythm of successive spasms, increasing in number and rate as days go by; the intercostals then begin to contract. In the next stage, after the 45th day, the response to stimulation is an initial movement of the body followed by an after-discharge which resembles a respiratory rhythm. Thus the respiratory movements are separated in time from the body movements, but are still part of a response to a stimulus. Between the 50th and 60th days there is a change from a condition in which rhythmic movements of the chest come and go with little obvious cause to one in which the foetus has become inert. It can, however, be thrown into activity by occlusion of the umbilical cord. No further change takes place till birth. Only when this state of inhibition, which persists for the second half of gestation, has been reached does occlusion of the cord start respiratory movements. The inhibition is exerted from a level at least as high as the posterior corpora quadrigemina. From the time of onset of inhibition, Barcroft says that the issue "whether the foetus did or did not exhibit respiratory movements depended on whether stimulation or inhibition had the upper hand." When the foetus is delivered, a flow of sensory impulses beats upon the brain and must exert a profound effect in raising the general sensitivity of the central nervous system.

From the foregoing it could be argued that if the stimulation of birth is not enough to overcome the inhibitory impulses acting on respiration, then the injection of a convulsant drug might serve to tip the balance and start respiration.

NOTES AND COMMENTS

Water-pitressin Test in Epilepsy.—Lieutenant-Colonel M. CHANDRA (Jullundur City, India) writes: With reference to the question and answer regarding the water-pitressin test in epilepsy ("Any Questions?" Feb. 12, p. 291), I have notes on 24 cases on whom this test was carried out in the M.E.F. in 1945–6. Eighteen had epileptic fits during the test. In most the fits came on during the course of the first three or four injections of pitressin, provided a positive water balance had been established first, before injections were started. I found that if cases tested were close together in a group the hysterics—seeing the epileptics and determined not to be outdone—had sorts of fits as well. This vitiated the value of the test, especially if the description of the fits given by the nursing staff was vague. So the value of the test is enhanced if the suspects are tested singly and if they do not know what is coming to them. Some epileptics, after having a fit during the test, carried on afterwards having frequent fits. These were controlled by dehydration and sedatives.

Horse-riding for the Infirm.—Dr. W. J. HASTINGS SAYERS (Edinburgh) writes: I have become interested in the possibility of horse-riding for the infirm. I have noticed of late in various journals advertisements, both "For Sale" and "Wanted," of mounts suitable for the infirm rider. Whilst on war service I remember seeing an elderly gentleman, who was recovering from a heart attack, riding in the manège. The appearance of ease on the part of the rider whilst cantering has caused me to wonder if carefully regulated riding might not be made use of early in the convalescence of certain types of patients. I would like to see the cob becoming as indispensable to the lame as the dog has become to the blind—both can become more independent of their fortunate neighbours. Possibly if the infirm horsemen were less individualistic it would not be necessary to write this letter. I wonder if any of your contributors could help me either from personal experience or observation. I am particularly interested in the possibility of riding for a patient with paralysis due to disseminated sclerosis, who wishes to visit in the country places where no invalid carriage or car will go.

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